









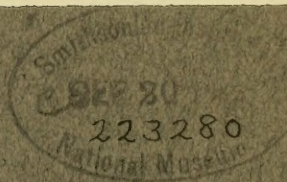




COOPER ORNITHOLOGICAL CLUB

- No. 7. Birds of the Pacific Slope of Southern  
California. By George Willett.
- No. 8. A Systematic List of the Birds of California.  
By Joseph Grinnell.
- No. 9. Some Birds of the Fresno District, California.  
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- No. 10. A Distributional List of the Birds of Arizona.  
By Harry S. Swarth.

HOLLYWOOD, CALIFORNIA  
PUBLISHED BY THE CLUB  
July 25, 1912





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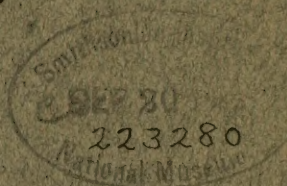
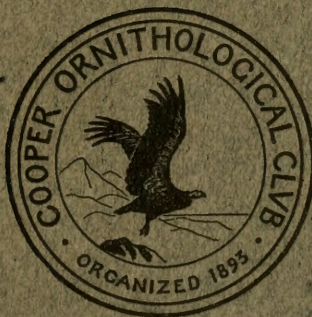
PACIFIC COAST AVIFAUNA

NUMBER 7

BIRDS OF THE PACIFIC SLOPE OF  
SOUTHERN CALIFORNIA

BY

GEORGE WILLETT



HOLLYWOOD, CALIFORNIA

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Edited by  
JOSEPH GRINNELL  
and  
HARRY S. SWARTH  
at the  
*Museum of Vertebrate Zoology*  
*University of California*

#### NOTE

PACIFIC COAST AVIFAUNA NO. 7 is the seventh of a series of publications issued by the Cooper Ornithological Club for the accommodation of papers whose length prohibits their appearance in THE CONDOR.

The publications of the Club consist of two series: THE CONDOR, which is the bi-monthly, official organ, and the PACIFIC COAST AVIFAUNA. Both publications are sent as issued, free to honorary members and to active members in good standing. For information as to either of the above series, address the Club Business Managers, either J. Eugene Law, Hollywood, California, or W. Lee Chambers, Eagle Rock, California.

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## INTRODUCTION

In February, 1910, at the request of the Southern Division of the Cooper Ornithological Club, I began the compilation of the paper presented herewith. The first idea of the Club was to revise Grinnell's *Birds of the Pacific Slope of Los Angeles County*, published in 1898 by the Pasadena Academy of Sciences. It was finally decided, however, to extend the boundaries of the territory covered by that list so as to take in the Pacific slope of southern California from, and including, Santa Barbara County, to the Mexican line, and from the summit of the mountains to the ocean, also including all the islands of the Santa Barbara group. This territory comprises all of Santa Barbara and Ventura counties, Los Angeles County south and west from the Liebre Mountains, Sierra Pelona and Sierra San Gabriel, San Bernardino County south and west from the Sierra Madre and San Bernardino ranges, all of Orange County, Riverside County west from the San Jacinto Range, and San Diego County west from the Volcan and Cuyamaca ranges; also the eight islands of the Santa Barbara group, namely San Miguel, Santa Rosa, Santa Cruz, Anacapa, Santa Barbara, San Nicolas, Santa Catalina and San Clemente. In some cases I have deemed it advisable to refer to records outside the limits as described above in order to show certain connecting features in distribution or migration.

By vote of the Southern Division of the Club, it was recommended that I adhere closely to the nomenclature employed in the latest edition of the American Ornithologists' Union *Check-List of North American Birds*, published in 1910. In some instances I have been led to differ from the decisions of the A. O. U. Committee, as given in the *Check-List*, in regard to the distribution of certain species and subspecies. In such cases I have given reasons for my contrary opinion.

I have endeavored to treat conservatively all instances of unusual occurrence recorded without absolute evidence of their authenticity. Some of these that have appeared to me to be most unlikely, and probably the result of misidentification, I have omitted entirely, and others whose occurrence in this locality, although appearing doubtful, is supported by a certain amount of apparently authentic evidence, I have assigned to the hypothetical list.

In the case of the rarest breeding birds, I have attempted to give all, or at least several, breeding records. In case of species that breed commonly, I have given the earliest and latest nesting dates that have come to my attention.

The dates given for migration and nesting are, I believe, practically correct.

However, there will be found exceptional instances, particularly as to times of migration, which will not come within the dates as given here. This, of course, is to be expected, as it is a well-known fact that individuals or small companies of many species either precede or straggle behind the main migratory body.

Especially is this true in the case of many of the water-birds, which are frequently noted along our coast at times when, according to the general dates as given here for their migrations, they should be engaged in incubating their eggs or raising their young in a more northern latitude. Some of these stragglers may have dropped behind the main body of their species as the result of wounds or disease which render them incapable of making the long northward journey to their breeding grounds. In some instances where the species does not mature the first year, many of the immature birds may remain with us, while the mature birds of their species go north to perform their reproductive duties. This is particularly noticeable in the case of the scoters.

In some other species, ordinarily migratory, there seem to be a considerable number of individuals that are non-breeders. These non-breeding birds are frequently noted with us during the summer months. Especially is this true with the turnstones, tattlers and many other waders. There is also a considerable variation from year to year in the dates of the migrations of many species, probably due principally to the condition of the weather and the food supply. Some species, also, maintain different routes of migration in spring and fall. They may be abundant in a certain locality during the fall migration and rare in the spring, or vice-versa.

Taking all these facts into consideration, it is easily seen that migration dates, while they may be substantially correct, are bound to be far from infallible, and exceptional instances, instead of being regarded as surprising, are to be expected.

The number in parenthesis at the right of the running number in the list is that given the species in the A. O. U. *Check-List*.

I have aspired to make this list as complete and as correct as possible; and with this end in view I have gone over all obtainable literature on the birds of this region and have culled thoroughly my own notes and those of many other students of the birds of the region. For all errors of commission or omission I ask the indulgence of the reader, and freely invite correction or criticism, realizing that absolute freedom from error in a list of this kind is an impossibility.

## ACKNOWLEDGMENTS

I am under great obligations to Joseph Grinnell, G. Fream Morcom, Robert Ridgway and Harry S. Swarth, who have at all times been ready with advice on perplexing questions, many of which I would have been entirely unable to solve without their help.

I am deeply indebted to W. Lee Chambers and Harry J. Lelande for the unrestricted use of their fine libraries, to the Los Angeles Public Library and to the Library of the University of California for the loan of books, and to William and George Cline of Los Angeles for the privilege of examining their fine collection of mounted birds.

To the following members of the Cooper Club my thanks are due for the use of specimens and notes: J. S. Appleton, Louis B. Bishop, J. Hooper Bowles, William Brewster, Homer C. Burt, W. Lee Chambers, Wells W. Cooke, Frank S. Daggett, Evan Davis, W. Leon Dawson, Edwin W. Gifford, M. French Gilman, Joseph Grinnell, Alfred B. Howell, Ozra W. Howard, Albert M. Ingersoll, Alphonse Jay, Antonin Jay, W. B. Judson, J. Eugene Law, Harry J. Lelande, Clarence B. Linton, Leverett M. Loomis, Loye H. Miller, Harry C. Oberholser, Virgil W. Owen, Richard M. Perez, Lawrence Peyton, Sidney Peyton, Wright M. Pierce, Roth Reynolds, Howard Robertson, Frank Stephens, Kate Stephens, Harry S. Swarth, John E. Thayer, Adriaan van Rossem, Harry E. Wilder and Howard W. Wright.

GEORGE WILLETT.

*Los Angeles, California,  
February 1, 1912.*



## BIRDS OF THE PACIFIC SLOPE OF SOUTHERN CALIFORNIA

### 1. (1) *Æchmophorus occidentalis* (Lawrence). WESTERN GREBE.

Common winter visitant to the ocean and salt lagoons along the coast. Occasional on bodies of water inland. Arrives about September and leaves generally by the latter part of April, but may be seen occasionally during the summer. A single Western Grebe was noted by Bradford Torrey on the ocean near Santa Barbara on several occasions during the months of June, July and August, 1910 (Condor XII, 1910, 204).

### 2. (2) *Colymbus holboelli* (Reinhardt). HOLBOELL GREBE.

Rare winter visitant. Observed at Santa Barbara by A. L. Heermann (Pac. R. R. Rep. x, 1859, 76), and C. B. Nordhoff records finding the remains of an immature bird at Elsinore Lake, Riverside County, in February, 1902 (Auk XIX, 1902, 212).

### 3. (3) *Colymbus auritus* Linnaeus. HORNED GREBE.

Probably a fairly common winter visitant on the ocean, less plentiful on inland bodies of water. C. P. Streater took a specimen at Santa Barbara in 1885 (Orn. & Ool. XI, 1886, 90). I have taken specimens at Hyperion, Los Angeles County, as follows: Adult female, March 10, 1911; adult male, January 3, 1912; and adult male, January 8, 1912. C. B. Linton took an immature female at Alamitos, Los Angeles County, January 14, 1907, and an adult female at San Diego Bay, November 4, 1906 (Condor IX, 1907, 110). E. Heller took a specimen near Riverside in the winter of 1893 (Condor III, 1901, 100).

### 4. (4) *Colymbus nigricollis californicus* (Heermann). EARED GREBE.

Common breeding bird on some of the lakes of higher altitudes, less common on ponds in the lower country, south to San Diego County. In winter may be found plentifully on ponds of the lower country, on the salt lagoons along the coast, and on the ocean. Breeds at Elizabeth Lake, northern Los Angeles County, and abundantly at Bear Lake in the San Bernardino Mountains. At the latter place I took fresh sets of eggs on June 22, 1907, at which date most of the nests contained incomplete sets.

According to Alphonse and Antonin Jay, a few pairs of these birds nest every year at Railroad Lake, a small lagoon near Wilmington, Los Angeles County, a short distance from the ocean. H. J. Leland found a colony of about fifteen pairs nesting at Nigger Slough, Los Angeles County, July 8, 1911. All of the nests contained eggs at this date.

A colony of more than a hundred birds was found by A. M. Ingersoll and W. B. Judson at San Jacinto Lake, Riverside County, in 1897. On June 8, they examined upwards of forty nests containing eggs. C. S. Sharp found a nest of the Eared Grebe, containing seven partly incubated eggs, in the San Pasqual Valley, near Escondido, San Diego County, April 22, 1906 (Condor IX, 1907, 85).

### 5. (6) *Podilymbus podiceps* (Linnaeus). PIED-BILLED GREBE.

Common breeding species on fresh water ponds and lakes of the lower

country. In winter occurs along the coasts as well as on inland bodies of water. Breeds mostly in May.

Antonin Jay took a set of eight eggs, advanced in incubation, at Nigger Slough, Los Angeles County, May 17, 1903, and a set of seven, incubation commenced, in the same locality, June 7, the same year. I found the species breeding plentifully at San Jacinto Lake, Riverside County, May 27 and 28, 1911. At this date most of the eggs were hatched (Condor XIII, 1911, 157). C. S. Sharp has taken fresh eggs in the vicinity of Escondido, San Diego County, from May 3 to June 24 (Condor IX, 1907, 86).

6. (7) **Gavia immer** (Brünnich). COMMON LOON.

Fairly common winter visitant along the coast south to Lower California; sometimes on inland lakes and ponds. Arrives in October and leaves during the latter part of April and first part of May. Occasional in summer. I have an adult female in winter plumage taken at Bolsa Chica, Orange County, November 10, 1907, and an adult male in almost full breeding plumage taken at Alamitos, Los Angeles County, May 4, the same year. I also saw two birds of this species in immature plumage fishing near the pier at Manhattan Beach, Los Angeles County, July 6, 1911, and noted one bird at Bolsa Chica, July 24, 1911. J. G. Cooper found the Loon abundant in winter in San Diego Bay, some remaining as late as May (B., Br. & Ridg., W.B.N.A. II, 1884, 447).

7. (10) **Gavia pacifica** (Lawrence). PACIFIC LOON.

Common winter visitant on the ocean. Particularly abundant around the Santa Barbara Islands. Arrives in September and remains until late in May.

8. (11) **Gavia stellata** (Pontoppidan). RED-THROATED LOON.

Regular winter visitant along the coast. Arrives at about the same time as the preceding species, but the majority appear to depart about a month earlier in the spring (Beck, Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 58). I have taken several specimens of this loon along the Los Angeles County coast in winter. A. L. Heermann obtained one example at San Diego (Pac. R. R. Rep. x, 1859, 76), and J. G. Cooper secured a male at Santa Barbara, April 27, 1863 (B., Br. & Ridg., W.B.N.A. II, 1884, 458).

9. (12) **Lunda cirrhata** (Pallas). TUFTED PUFFIN.

Common resident on Anacapa, Santa Cruz and San Miguel islands and probably also on Santa Rosa. Less common on Santa Barbara and San Nicolas. H. W. Henshaw noted this species nesting on Santa Cruz Island in the summer of 1875 (Ann. Rep. Ch. En. U. S. G. S., App. JJ, 1876, 278). J. S. Appleton and H. C. Burt took fresh eggs on San Miguel Island, June 6, 1906, and in June, 1910, I found them breeding commonly there and also on Anacapa. (Condor XII, 1910, 172). C. B. Linton saw a Tufted Puffin on San Nicolas Island in May, 1910, and I saw one in the same locality, June 23, 1911. The species has been noted on Santa Barbara Island by various observers.

10. (15) **Cerorhinca monocerata** (Pallas). RHINOCEROS AUKLET.

Common winter visitant along the coast, south to Lower California. Arrives in October and may be found until early May. I have taken many specimens

of this bird around the Santa Barbara Islands where they are particularly numerous. Frequently found dead along the beaches. Noted by H. W. Henshaw as abundant off San Diego during the winter of 1884 (Auk II, 1885, 387).

11. (16) **Ptychoramphus aleuticus** (Pallas). CASSIN AUKLET.

Common resident along the coast. Breeds on Santa Barbara, Santa Cruz and San Miguel islands and probably also on Santa Rosa. In winter may be found on the ocean everywhere. J. Grinnell and H. A. Gaylord took four nearly hatched eggs of this species on Santa Barbara Island, May 16, 1897. At this date the majority of the nests found contained young of various ages (Pub. 1, Pasadena Acad. Sci., 1897, 22). On visiting Santa Barbara Island in June, 1911, I found that the old breeding colony of these birds was entirely abandoned. From the bones and feathers of the birds found all over the island, I concluded that they had been exterminated by the cats with which the island is infested. On a detached rocky islet about a quarter of a mile from the main island, I found a colony of about a hundred pairs of Auklets nesting. Nine nests examined on June 14 contained far incubated eggs. R. H. Beck found incubated eggs and young near Scorpion Harbor, Santa Cruz Island, June 5, 1895 (Bull. Cooper Orn. Club I, 1899, 85). I found the Cassin Auklet breeding abundantly on small islands lying off San Miguel Island in the summer of 1910. On June 15 I took two fresh eggs, but most of the nests contained young (Condor XII, 1910, 172).

12. (21) **Synthliboramphus antiquus** (Gmelin). ANCIENT MURRELET.

Regular winter visitant along the coast, south at least to San Diego County. C. B. Linton took two birds at Santa Cruz Island December 17 and 18, 1907 (Condor x, 1908, 125). Linton also took several specimens at San Clemente Island in December, 1908 (Condor xi, 1909, 102). A. van Rossem took a specimen from a flock of eight birds at Catalina Island, February 13, 1910 (Osburn, Condor XIII, 1911, 76). I found a bird of this species dead on the beach at Hyperion, Los Angeles County, March 17, 1910, and Howard Wright found two dead at Terminal Island, Los Angeles County, January 23, 1908, and another on February 8, the same year (Condor xi, 1909, 64). A male was found dead by H. W. Marsden at Pacific Beach, San Diego County, April 25, 1904 (Bishop, Condor VII, 1905, 141).

13. (23) **Brachyramphus marmoratus** (Gmelin). MARBLED MURRELET.

Winter visitant on the ocean, south at least to Santa Barbara. The A.O.U. *Check-List* and other lists have repeatedly given the range of this species as "south to San Diego in winter." There seems to be, however, no authentic record south of Santa Barbara.

Clark P. Streator took several specimens near Santa Barbara during the winter of 1885-6 (Orn. & Ool. XI, 1886, 90). J. H. Bowles has a specimen taken in the same locality. He found it dead on the beach July 30, 1910. On another occasion he saw a bird of this species fishing around one of the piers at Santa Barbara. L. M. Loomis and R. H. Beck have noted the Marbled Murrelet at Monterey from late July (1894) until April 2 (1907). The birds were very irregular in their movements, being plentiful at certain seasons during some

years and rare at the same seasons during other years (Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 59-60).

14. (25) **Brachyramphus hypoleucus** Xantus. XANTUS MURRELET.

Fairly common on the ocean throughout the year. Breeds in small numbers on several of the Santa Barbara Islands, north at least to Anacapa.

Howard Wright has noted this bird in summer at San Clemente Island and believes that they were breeding there, although he failed to locate the nests. J. G. Cooper states that he found it breeding rarely on Santa Barbara Island in the 60's (Proc. Cal. Acad. Sci. iv, 1868, 12). In June, 1911, I noted several birds near this island and on June 15, I found an egg, the contents of which had been eaten by a raven or gull. On June 5, 1910, I saw two pairs of these Murrelets near the east end of Anacapa Island (Condor XII, 1910, 170); and H. C. Burt took a slightly incubated egg on this island, May 15, 1911. Another fresh egg and a set of three eggs, also fresh, were taken for Mr. Burt in the same locality by H. B. Webster, May 29, the same year.

15. (29) **Cephus columba** Pallas. PIGEON GUILLEMOT.

Common resident on Santa Barbara, Anacapa, Santa Cruz, Santa Rosa and San Miguel islands, breeding in May and June. Recorded south to San Nicolas and San Clemente.

Noted breeding on Santa Cruz Island by H. W. Henshaw in the summer of 1875 (Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 278). J. Grinnell and H. A. Gaylord took four slightly incubated sets of eggs on Santa Barbara Island May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 23); and I found fresh eggs on San Miguel Island as late as June 23 (1910) (Condor XII, 1910, 172). On June 26, 1911, I saw three birds at San Nicolas Island, where they were probably breeding, and J. G. Cooper recorded the species from San Clemente (Proc. Cal. Acad. Sci. iv, 1869, 79).

16. (30a) **Uria troille californica** (H. Bryant). CALIFORNIA MURRE.

Breeds on San Miguel Island in moderate numbers. South in winter at least to coast of Orange County. Noted by C. P. Streater as rather rare at Santa Barbara in 1885 (Orn. & Ool. XI, 1886, 107). Seen once in summer by B. W. Evermann near the wharf at Ventura (Auk III, 1886, 88). W. Lee Chambers found a Murre in dying condition on the beach at Santa Monica, Los Angeles County, November 3, 1900 (Swarth, Condor III, 1901, 17); and I found one dead on the beach at Bay City, Orange County, March 9, 1910.

In June, 1906, J. S. Appleton and H. C. Burt found a colony of about a hundred pairs of Murres breeding on a small island about half a mile from the main island of San Miguel. On June 6, they took fresh and slightly incubated eggs. In June, 1910, I visited this colony accompanied by Mr. Appleton and other members of the Cooper Ornithological Club, and we found that the colony had not appreciably increased or diminished since Mr. Appleton's first visit. By June 15, some of the eggs had hatched and most of the others were advanced in incubation (Condor XII, 1910, 172). This is, by far, the most southern breeding record for the species.

17. (36) **Stercorarius pomarinus** (Temminck). POMARINE JAEGER.

Jaegers are frequently seen along our coast, but, as few specimens have been taken, it is hardly possible to estimate the comparative abundance of this species and the next. According to the last A.O.U. *Check-List*, the Pomarine Jaeger is a common fall migrant on the coast of California, wintering south to the Galapagos Islands. It occurs at Point Pinos, Monterey County, every month in the year, but is really common only during the passage southward in August, September and October (Beck, Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 61). We may safely conclude from the above that the species is rather common on the ocean in the fall, and may occasionally be found at other times of the year.

18. (37) **Stercorarius parasiticus** (Linnaeus). PARASITIC JAEGER.

Fairly common fall and winter visitant along the coast. According to R. H. Beck, most numerous on the coast of Monterey County in August and September (Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 61). Noted by H. W. Henshaw as common in December, 1884, from Santa Barbara north (Auk II, 1885, 232). Recorded by B. W. Evermann as frequently seen in winter along the coast above Ventura (Auk III, 1886, 88). H. S. Swarth took a female at Santa Monica, Los Angeles County, September 29, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 6). I took a male at Hyperion, Los Angeles County, December 15, 1911; and on December 18, following, I took two more specimens and Antonin Jay secured one, in the same locality.

19. (38) **Stercorarius longicaudus** Vieillot. LONG-TAILED JAEGER.

One record, that of a young male taken by H. W. Marsden at Pacific Beach, San Diego County, September 19, 1904 (Bishop, Condor VII, 1905, 141). Now no. 11682, collection L. B. Bishop.

20. (40a) **Rissa tridactyla pollicaris** Ridgway. PACIFIC KITTIWAKE.

Regular winter visitant in small numbers, south to Lower California. A female in first winter plumage was sent to J. Grinnell from Playa del Rey, Los Angeles County, where it was found dead on the beach, January 9, 1906 (Condor VIII, 1906, 57). Antonin Jay has an immature male found dead on the beach in the same locality, December 30, 1911. C. B. Linton took a female at Alamitos Bay, Los Angeles County, April 14, 1907 (Condor IX, 1907, 199). A. W. Anthony noted the Kittiwake as of regular, though not common, occurrence, off San Diego and about the Coronados Islands (Auk XV, 1898, 267). He took a specimen near San Diego February 26, 1895 (Auk XII, 1895, 177).

21. (44) **Larus glaucescens** Naumann. GLAUCOUS-WINGED GULL.

Regular winter visitant in small numbers, south at least to San Diego. Recorded by B. W. Evermann as a winter visitant at Ventura, though not common (Auk, III, 1886, 88). J. Grinnell noted it at Catalina Island in December, 1897, and W. B. Judson took an immature bird at Redondo, Los Angeles County, in winter (Pub. 2, Pasadena Acad. Sci., 1898, 6). Several immatures were noted by G. F. Breninger at San Clemente Island in February, 1903 (Auk XXI, 1904, 219). I have an immature female taken by Antonin Jay at Hyperion, Los Angeles County, July 4, 1910, and I saw an adult bird in the same locality.

December 22, 1911. Recorded from San Diego by J. G. Cooper (B., Br. & Ridg., W. B. N. A. II, 1884, 224) and A. W. Anthony (Auk XXIII, 1906, 131).

22. (49) **Larus occidentalis** Audubon. WESTERN GULL.

Abundant resident. Breeds in May and June on all the Santa Barbara Islands. Occasional inland in winter. During the breeding season most of the Western Gulls seen along the shore of the mainland are immature birds.

23. (51) **Larus argentatus** Pontoppidan. HERRING GULL.

Fairly common in winter along the coast, south to Lower California. Occasional on inland lakes and ponds. Arrives about September and remains until May.

24. (53) **Larus californicus** Lawrence. CALIFORNIA GULL.

Common along the coast from September until early May. Occasional inland. One bird was noted by J. Grinnell off Catalina Island, May 12, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 23).

25. (54) **Larus delawarensis** Ord. RING-BILLED GULL.

Abundant winter visitant along the coast from September to May. Occasional inland. I found this species common at Alamitos Bay, Los Angeles County, September 17, 1907, and abundant at Hyperion, Los Angeles County, April 25, 1910. Immature birds were rather plentiful in the latter locality as late as May 24 (1910).

26. (55) **Larus brachyrhynchus** Richardson. SHORT-BILLED GULL.

Rather rare winter visitant along the coast, south at least to San Diego. I have never met with this species in southern California, but it has been recorded as follows: B. W. Evermann found a specimen dead on the beach near Ventura in December, 1879 (Auk III, 1886, 88). According to H. W. Henshaw, it was not uncommon along the coast of southern California during the winter of 1884 (Auk II, 1885, 232). In the Salvin-Godman collection in the British Museum are a male adult collected by Mr. Henshaw at Ventura in November and a pair of juvenals collected at San Diego in December (Saunders, Cat. Birds Brit. Mus. xxv, 1896, 284).

According to E. W. Gifford, of the California Academy of Sciences, the specific characters ascribed to this form are all to be found in *Larus canus* (Beck, Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 63).

27. (57) **Larus heermanni** Cassin. HEERMANN GULL.

Very common along the coast and among the islands from the last week in May until the middle of March. Originally described from San Diego (Proc. Acad. Nat. Sci. Phil. VI, 1852, 187). This interesting species may be found along our coast every month in the year. The majority, however, leave for their breeding grounds off the Mexican coast during the month of March and return during the last week in May and the month of June. This is the only species of the genus on our coast that goes south to breed.

28. (60) **Larus philadelphia** (Ord). BONAPARTE GULL.

Common along the coast in fall, winter and spring. Frequently seen on in-

land bodies of water, mostly during migrations. I have found this gull plentiful along the Los Angeles County coast from August 20 (1910) to May 10 (1910), and have noted immature birds common at Nigger Slough, Los Angeles County, as late as June 2 (1910). Recorded by H. W. Henshaw as not uncommon in San Diego Bay during the winter of 1884 (Auk II, 1885, 232).

29. (62) **Xema sabini** (Sabine). SABINE GULL.

Probably a fairly common migrant on the ocean; so far not noted along our mainland coast. Howard W. Wright took a male and female near Santa Cruz Island, August 6, 1909, and a female near Los Coronados Islands, August 20, 1910: now nos. 2466, 2467, 2468, collection of Howard W. Wright. This species breeds in the far north and is known to winter in abundance on the Pacific coast of South America. L. M. Loomis and R. H. Beck have found it to occur in considerable numbers at Monterey during the fall migration. They have noted it at this season from July 22 (1907) to October 6 (1909). Their only spring record is of eleven birds, all seen between the 15th and 21st of May, 1907 (Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 63).

30. (64) **Sterna caspia** Pallas. CASPIAN TERN.

Although the A. O. U. *Check-List* gives the winter range of this species as "from the coast of Central California to Lower California," it is apparently rare in southern California. C. B. Linton took a specimen at Buena Vista Lake, Kern County, May 26, 1907 (Condor x, 1908, 196), and M. A. Frazar took an adult female at La Paz, Lower California, January 25, 1887 (Brewster, Bull. Mus. Comp. Zool. XLI, 1902, 23). So far as I know, the only specimen of the Caspian Tern taken in the territory covered by this list is an immature female, now in the British Museum, taken by H. W. Henshaw at San Diego in December (Saunders, Cat. Birds Brit. Mus. xxv, 1896, 32). C. B. Linton records seeing eight of these birds at Alamitos Bay, Los Angeles County, December 27, 1908 (Condor xi, 1909, 68). Mr. Linton tells me that he was very close to the birds and is not likely to have been mistaken as to their identity. H. S. Swarth saw one bird in the same locality, May 16, 1901.

31. (65) **Sterna maxima** Boddaert. ROYAL TERN.

Common along the coast from September to May. Occasional in summer. J. Grinnell noted one bird at Catalina Island, June 9, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 24), and C. B. Linton saw several at San Nicolas Island, June 17, 1910. The Royal Tern has been reported as breeding on San Miguel Island, but I consider this very doubtful. In June, 1910, I went over that island thoroughly and am positive that it was not breeding there at that time. The only birds seen were a few immatures noted on June 17, one of which was secured (Condor xii, 1910, 173). I believe that the birds seen along our coast during the summer months are mostly immature.

32. (66) **Sterna elegans** Gambel. ELEGANT TERN.

As this species breeds on the Mexican coast and was found by L. M. Loomis to be fairly common off Monterey, California, in September and October, 1906

(Beck, Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 64), it is probably of more or less regular occurrence along our whole coast. So far as I know, only one specimen has been recorded from southern California, an adult male taken by H. W. Marsden at Pacific Beach, San Diego County, September 21, 1904 (Bishop, Condor VII, 1905, 31); now no. 11683, collection of Louis B. Bishop.

33. (69) ***Sterna forsteri*** Nuttall. FORSTER TERN.

Common along the coast and on inland lakes and ponds in fall, winter and spring. Occasional during the summer. Most abundant along the Los Angeles County coast in the fall from September 1 to October 20, and in the spring from March 10 to May 15. I saw several birds at Nigger Slough, Los Angeles County, May 25, 1907, and E. Heller found them common at Elsinore Lake, Riverside County, June 2, 1896 (Condor III, 1901, 100). J. Grinnell noted them daily at Bear Lake in the San Bernardino Mountains, from July 28 to August 2, 1905 (Univ. Calif. Publ. Zool., v, 1908, 52). Although the Forster Tern has been reported as breeding in southern California, I know of no authentic records.

34. (70) ***Sterna hirundo*** Linnaeus. COMMON TERN.

This species on sight being so easily confused with the last, its comparative abundance is difficult to determine accurately, but it is probably a regular migrant along our coast in limited numbers. The fall migration appears to take place principally in September and the spring migration in May. A. B. Howell and J. H. Bowles found the Common Tern fairly plentiful at Santa Barbara during September, 1911. C. B. Linton took five specimens at Alamitos Bay, Los Angeles County, September 25, 1907 (Willett, Condor x, 1908, 50). H. W. Marsden took three adult males at Pacific Beach, San Diego County, September 8, 12 and 15, 1904 (Bishop, Condor VII, 1905, 31). I took a pair of adults from a flock of fifteen or twenty birds that were feeding around the Los Angeles out-fall sewer at Hyperion, May 24, 1910 (Condor XII, 1910, 174).

35. (71) ***Sterna paradisaea*** Brünnich. ARCTIC TERN.

Occurs along the coast during migrations. H. S. Swarth took a male at Terminal Island, Los Angeles County, October 30, 1901, and F. S. Daggett took three specimens near San Pedro, September 13, 1902 (Condor v, 1903, 17).

36. (74) ***Sterna antillarum*** (Lesson). LEAST TERN.

Common summer resident along the coast. Arrives in April and leaves mostly in September. Nests in suitable localities along the sandy beaches. Eggs are generally deposited in June and July. There are substantial breeding colonies at Hueneme, Playa del Rey, Sunset Beach, Newport and Pacific Beach. Evan Davis has found fresh eggs at Newport, Orange County, as early as May 20 and as late as August 12 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 8).

37. (77) ***Hydrochelidon nigra surinamensis*** (Gmelin). BLACK TERN.

Common migrant along the coast and on inland lakes and ponds. I found this species abundant at Hyperion, Los Angeles County, from August 20 to September 10, 1910; and the birds were plentiful at Nigger Slough, Los Angeles County, from April 22 to May 9, 1910, a few remaining as late as May 18. E. Heller observed the Black Tern at Elsinore Lake, Riverside County, June

2, 1896 (Condor III, 1901, 100), and one bird was noted by J. Grinnell at Bear Lake, San Bernardino Mountains, July 30, 1905 (Univ. Calif. Publ. Zool. v, 1908, 52).

This bird has been reported as breeding at Elsinore and San Jacinto lakes, but I know of no authentic nesting records. I saw two birds at San Jacinto Lake, May 28, 1911. They gave no signs of breeding and were probably stragglers (Condor XIII, 1911, 158). There are nesting colonies at Buena Vista and Tulare lakes.

38. (81) **Diomedea nigripes** Audubon. BLACK-FOOTED ALBATROSS.

Common out at sea during the entire year. Birds seen during spring and early summer are probably immature.

39. (82) **Diomedea albatrus** Pallas. SHORT-TAILED ALBATROSS.

Fairly common on the ocean. Occasionally seen close in-shore during severe weather. Two specimens taken near Santa Barbara are recorded by C. P. Streater. One of them, which was in his collection, was taken fifty miles at sea about the middle of March, 1885 (Orn. & Ool. XI, 1886, 90). Recorded by B. W. Evermann from Ventura as frequently seen along the coast and in the bay in winter (Auk III, 1886, 89). A specimen taken at San Pedro by C. Rutter, April 3, 1898, was presented to the Zoological Department at Stanford University (McLain, Auk xv, 1898, 267). M. L. Wicks, Jr., found a bird of this species dead in the surf near Long Beach, Los Angeles County, July 26, 1892 (Oologist x, 1893, 88). Evan Davis has a specimen that was killed near Newport, Orange County (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 8). C. B. Linton has the head of a 'Short-tailed Albatross that was captured alive by his camp cook on San Nicolas Island, April 1, 1909. Mr. Linton was absent at the time of the capture and his man killed the bird and cooked it. He afterwards stated that he did not find it particularly appetizing. J. G. Cooper noted this species at San Nicolas Island July first, and at San Diego Bay in December (B., Br. & Ridg., W. B. N. A. II, 1884, 354).

40. (86b) **Fulmarus glacialis glupischa** Stejneger. PACIFIC FULMAR.

Common on the ocean in fall, winter and spring. Generally arrives in September and October, and leaves in April. I have taken many specimens of this bird along the Los Angeles County coast and around the Santa Barbara Islands. Those in the dark plumage generally greatly out-number the light ones. Large numbers of this and the following species are frequently seen dead on the beaches during the winter and spring.

41. (86.1) **Fulmarus rogersi** Cassin. RODGERS FULMAR.

Irregular fall, winter and spring visitant on the ocean, south at least to San Diego. Not nearly so numerous as the last. I have two specimens of this bird that I picked up dead on the beach near Anaheim Landing, Orange County, March 1, 1908. Many more were seen at the same time in different stages of decomposition (Condor XII, 1910, 46). I also took an adult female at Hyperion, Los Angeles County, December 29, 1911, and Antonin Jay took two specimens in the same locality the following day.

Many ornithologists are of the opinion that *Fulmarus rodgersi* is the extreme light phase of *Fulmarus glacialis glupischa* and is not entitled to recognition as a separate form. I am inclined to believe that this conclusion is the correct one, as I have seen birds in every stage of plumage from the lightest of the former to darkest of the latter.

42. (91) **Puffinus creatopus** Coues. PINK-FOOTED SHEARWATER.

Common along the coast in summer and fall. Leaves in December and January, and returns during the latter part of May and the month of June. Originally described from San Nicolas Island (Proc. Acad. Nat. Sci. Phil. xvi, 1864, 131). H. S. Swarth has a male that he found dead on the beach at Redondo, Los Angeles County, May 10, 1901. I have frequently found them dead on the southern California beaches in summer and fall, and saw them near Anacapa and Santa Cruz islands in November and December, 1907. During the first part of June, 1910, I saw occasional birds of this species in company with Sooty Shearwaters, around the northern islands of the Santa Barbara group. By June 23 they had become quite numerous (Condor xii, 1910, 173). J. G. Cooper saw the species near San Nicolas Island in July, 1863 (Proc. Cal. Acad. Sci. iv, 1868, 11).

43. (93) **Puffinus opisthomelas** Coues. BLACK-VENTED SHEARWATER.

At the close of their breeding season on the islands off the coast of Lower California, these birds migrate in large numbers northward along the coast of southern California. They are very irregular as to the time of their arrival, sometimes appearing as early as May 10, and at other times not being noted until July or August. They also vary a great deal in numbers, some years being much more abundant than others. A. W. Anthony says: "Their presence along the coast of southern and Lower California seems to be governed very largely by the food supply. They are particularly abundant during late July, August and September, when they follow the large schools of herring and other small fish that come in-shore at that season" (Auk xiii, 1896, 223). The return journey to the breeding grounds is made in February, March and April.

J. Grinnell observed immense numbers of these birds resting on the water about a mile out from San Pedro Harbor, May 11, 1897. Ten specimens were secured. They all, males as well as females, had bare spaces on their breasts, and the state of the reproductive organs showed that they must recently have bred (Pub. 1, Pasadena Acad. Sci., 1897, 24). H. S. Swarth took a specimen at Redondo, Los Angeles County, May 26, 1899, and W. Lee Chambers found them abundant at Santa Monica, December 21 to 25, 1900. Several specimens were secured. There are four eggs of the Black-vented Shearwater in the National Museum, supposed to have been collected on Santa Barbara Island in 1873 by Captain C. M. Scammon. This record is regarded as doubtful by most ornithologists of this section.

44. (95) **Puffinus griseus** (Gmelin). SOOTY SHEARWATER.

Common on the ocean throughout the year. Most abundant from late

April until November. I have taken many specimens of this bird along the southern California coast and around the Santa Barbara Islands.

45. (96) **Puffinus tenuirostris** (Temminck). SLENDER-BILLED SHEARWATER.

An inhabitant of southern oceans, occurring irregularly north along the California coast in winter. It was noted at Monterey by J. Mailliard, December 17, 18 and 19, 1895 (Auk xv, 1898, 197), and by R. H. Beck, October 14 and December 2, 1907, and January 30, 1908 (Proc. Cal. Acad. Sci., ser 4, vol. III, 1910, 66). The only record I have seen for southern California is of a specimen taken from a small flock by A. W. Anthony, near San Diego, January 9, 1896 (Auk XIII, 1896, 171).

46. (105) **Oceanodroma furcata** (Gmelin). FORKED-TAILED PETREL.

There has been practically no systematic study of the Petrels along our southern California coast. The birds are very difficult to collect during migrations, and there are not enough specimens in collections from this locality to enable us to arrive at a definite conclusion as to the comparative abundance of the different species. The Forked-tailed Petrel occurs in migrations along the California coast, south at least to Los Angeles County. It was noted by R. H. Beck at Monterey in June, 1895, and November, 1903 (Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 66). It is recorded from off San Pedro by J. G. Cooper, who saw a specimen that was taken there by Mr. Lorquin and presented to the State Museum (Proc. Cal. Acad. Sci., iv, 1868, 10). Mr. Grinnell informs me that this specimen is now no. 4470, collection University of California Museum of Vertebrate Zoology. The label in Dr. Cooper's handwriting says "San Pedro Bay, Cal., 914, J. G. C., Shot by Lorquin. Exch."

47. (105.2) **Oceanodroma kaedingi** Anthony. KAEDING PETREL.

A. W. Anthony described this species from Lower California, and was under the impression that it bred there and occasionally straggled north to southern California in migrations (Auk xv, 1898, 37, 38). Recent investigations have shown, however, that it breeds to the north of us, and occurs in migrations along the whole California coast, south to Lower California. L. H. Miller has an adult male which flew on board the ship *Albatross*, while off San Clemente Island, March 22, 1904.

48. (107) **Oceanodroma melania** (Bonaparte). BLACK PETREL.

Common out at sea during the entire year. Least plentiful during July and August, at which season it breeds on the islands off the coast of Lower California, from Los Coronados southward. Straggles north at least to Monterey.

49. (108) **Oceanodroma homochroa** (Coues). ASHY PETREL.

Probably occurs on the ocean off the coast of California throughout the year. An adult from San Miguel Island (now in British Museum), was given to H. W. Henshaw by Captain Forney of the Coast Survey, who stated that the species bred on San Miguel in great numbers (Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 277). In June, 1910, I made particular search for this bird on San Miguel but failed to find it. I may possibly have overlooked it or it may not occur there

until later in the season. L. H. Miller has an adult female taken near Santa Barbara Island, April 10, 1904; in June, 1911, I found the species plentiful in the channel between Santa Barbara and San Nicolas islands. Although at this time I made careful search over all of the former island and part of the latter, I was unable to find any evidence of the species breeding.

50. (108.1) **Oceanodroma socorroensis** C. H. Townsend. SOCORRO PETREL.

Breeds on the islands off the coast of Lower California from Los Coronados south. Straggles northward at least to San Diego, where A. W. Anthony found it to be fairly common during April and May, 1895, at which time he took a small series of specimens (Auk XII, 1895, 387). Godman considers this form identical with *Oceanodroma monorhis* (Swinhoe), a race found on the coast of China and Japan (Mon. Petrels, 1907, 32-33).

51. (120c) **Phalacrocorax auritus albociliatus** Ridgway. FARALLON CORMORANT.

Common resident along the coast. Breeds on the Santa Barbara Islands in May and June. J. Grinnell and H. A. Gaylord took two sets of fresh eggs on Santa Barbara Island, May 15, 1897. At this date most of the birds were nest building (Pub. 1, Pasadena Acad. Sci., 1897, 25). June 15, 1910, I found the species breeding commonly on San Miguel Island. Nest contents varied from fresh eggs to half-grown young (Condor XII, 1910, 173). In some instances, probably where previous sets have been destroyed by the gulls, eggs may be found as late as August.

52. (122) **Phalacrocorax penicillatus** (Brandt). BRANDT CORMORANT.

Common resident along the coast. Breeds on the Santa Barbara Islands in April, May and June. C. B. Linton noted incomplete sets on San Nicolas Island, April 3, 1910, and I took four sets of fresh eggs on Catalina Island, April 11, 1904. J. Grinnell and H. A. Gaylord took thirty sets of eggs on Santa Barbara Island, May 15, 1897. They were in all stages of incubation, and several nests contained newly hatched young (Pub. 1, Pasadena Acad. Sci., 1897, 25). I found several large colonies nesting on San Miguel Island in June, 1910. On the 15th of the month, nests contained fresh and incubated eggs and young of various ages (Condor XII, 1910, 173).

53. (123b) **Phalacrocorax pelagicus resplendens** Audubon. BAIRD CORMORANT.

Common resident on the Santa Barbara Islands, but less plentiful than the two preceding species. Occasional along the mainland shores in winter. Breeds in May and June. J. Grinnell and H. A. Gaylord noted this species breeding on Santa Barbara Island, May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 26), and I found them nesting commonly on Anacapa and San Miguel islands in June, 1910. Fresh eggs were taken on the latter island as late as June 19 (Condor XII, 1910, 170, 174).

54. (125) **Pelecanus erythrorhynchos** Gmelin. WHITE PELICAN.

Regular visitant to the marsh lands in fall, winter and spring. Arrives in

October and November and leaves mostly in May. Recorded by B. W. Evermann as often seen on the lagunas of Ventura County in winter (Auk III, 1886, 89). F. S. Daggett noted a flock of about 125 birds flying over Pasadena, November 25, 1900. One of them was secured at long range with a high-power rifle (Condor III, 1901, 15). Howard Robertson saw thirty-five or forty birds flying along the Los Angeles River, near Los Angeles City, April 27, 1900. Alphonse Jay saw about 250 birds flying in a northerly direction over Sierra Madre, Los Angeles County, May 22, 1910, and I saw a single bird at Nigger Slough, Los Angeles County, May 25, 1907.

According to J. G. Cooper, few of this species reach San Diego, most of them veering to the eastward toward the Gulf of California (B., Br. & Ridg., W. B. N. A. II, 1884, 136). A male was taken at San Diego in the early 50's by A. Cassidy (Lawrence, Pac. R. R. Rep. IX, 1858, 869).

55. (127) **Pelecanus californicus** Ridgway. CALIFORNIA BROWN PELICAN.

Common resident along the coast. Breeds irregularly on several of the Santa Barbara Islands, the largest nesting colony north of the Mexican line being undoubtedly the one on Anacapa Island. During some seasons, however, the birds apparently do not nest there at all. The Anacapa colony was first described by C. F. Holder, who visited it in August, 1898. At this time the young were nearly full grown (Museum V, 1899, 71). In June, 1899, H. Robertson and V. W. Owen went over Anacapa thoroughly, but the Pelicans were apparently not nesting there at that time. On June 5, 1910, I visited this island in company with several other members of the Cooper Ornithological Club. We found about 500 nests of the Pelican containing eggs and young. Fresh eggs were taken from some nests, and nearly full-grown young were noted in others (Condor XII, 1910, 170). In May, the following year, H. C. Burt visited this locality and reports that, while there were a few birds present, they were not nesting.

H. Wright found several nests of this species, all of which contained young birds, on Santa Cruz Island, in July, 1909. June 15, 1910, I noted five nests containing young on San Miguel Island (Condor XII, 1910, 173), and on June 14, 1911, I found a colony of about twenty-five pairs breeding on Santa Barbara Island. All of the nests contained newly hatched young at this date.

56. (128) **Fregata aquila** (Linnaeus). MAN-O'-WAR-BIRD.

Resident of southern Lower California and Mexico. Occasionally straggles north along the coast of California. J. G. Cooper was told of a single specimen being shot at San Diego. It had entered the bay and alighted on the mast of an old hulk anchored there. He was also told that the species is common at some seasons outside the bay (B., Br. & Ridg., W. B. N. A. II, 1884, 130). I saw a female that was shot by A. C. Parsons at Alamitos Bay, Los Angeles County, June 17, 1906, and on June 13, 1911, two immature birds were caught with hook and line by a fisherman on the pleasure pier at Long Beach (Linton, Condor XIII, 1911, 168). An immature specimen was shot by L. Price at North Pasadena in August, 1892 (Lawrence, Auk X, 1893, 362), and H. S. Swarth saw three birds circling overhead near Los Angeles in December, 1897 (Grinnell, Pub. 2, Pasa-

dena Acad. Sci., 1898, 10). J. S. Appleton saw the head, wings and tail of one of these birds that was shot by L. Myers from the wharf at Hueneme, Ventura County, about 1895.

57. (129) **Mergus americanus** Cassin. AMERICAN MERGANSER.

Fairly common winter visitant on the ocean and the salt marshes near the coast. F. Stephens took a male at Alamitos Bay, Los Angeles County, December 15, 1879 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 10), and I noted one in the same locality, March 9, 1910. H. S. Swarth saw a male near Long Beach, Los Angeles County, May 17, 1901, and another near Redondo, April 25, 1899, and secured a female from a flock of eight, near Los Angeles, December 27, 1894. H. J. Lelande took a female near Long Beach, January 17, 1912. I have seen the species occasionally on the ocean along the Los Angeles County coast and have seen several specimens that were taken by hunters in various sections of southern California.

58. (130) **Mergus serrator** Linnaeus. RED-BREASTED MERGANSER.

Fairly common along the coast in fall, winter and spring. Arrives in October and leaves mostly in April. J. Grinnell noted this species at Catalina Island in December, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 10), and I noted it in the same locality in March, 1905. C. B. Linton found it fairly common at San Clemente Island during October, 1908, and at San Nicolas Island during January, February and March, 1909. He also saw one at the latter island April 1, 1910, and another on May 3, following. He took a female at Santa Cruz Island, December 2, 1907 (Condor x, 1908, 126). H. S. Swarth took a specimen near Long Beach, May 17, 1901.

59. (131) **Lophodytes cucullatus** (Linnaeus). HOODED MERGANSER.

Rather rare winter visitant. Although B. W. Evermann recorded this species as common in Ventura County during the rainy season (Auk III, 1886, 89), few have been noted of late years. F. Stephens took a male at Alamitos Bay, Los Angeles County, December 23, 1879 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 10), and J. E. Law took two females near Fillmore, Ventura County, December 31, 1905. H. J. Lelande has taken the species occasionally near Los Angeles, and in the Cline collection of mounted birds are several specimens taken in Los Angeles County in the early 80's.

60. (132) **Anas platyrhynchos** Linnaeus. MALLARD.

Common winter visitant, arriving in October and leaving mostly in March. A few remain through the summer and breed around fresh water lakes and ponds. Found breeding near Santa Barbara by C. P. Streater (Orn. & Ool. XI, 1886, 90), and near Saticoy by J. G. Cooper (Auk IV, 1887, 93). H. C. Burt found a nest containing eleven partly incubated eggs, near Hueneme, Ventura County, May 1, 1910. F. Stephens noted the species breeding at Bear Lake in the San Bernardino Mountains, in June, 1886 (Morcom, Bull. Ridg. Orn. Club, no. 2, 1887, 38), and C. S. Sharp records a nest found near Escondido, San Diego County, in 1896 (Condor IX, 1907, 86).

61. (135) **Chaulelasmus streperus** (Linnaeus). GADWALL.

Common winter visitant. Arrives mostly in late September and October and leaves in March. Occasionally remains through the summer and breeds in fresh water marshes. A. M. Shields has taken eggs near Los Angeles (Grinnell, Pub 2, Pasadena Acad. Sci., 1898, 10), and A. M. Ingersoll took a set of twelve eggs, with the female bird, at San Jacinto Lake, Riverside County, June 7, 1897.

62. (136) **Mareca penelope** (Linnaeus). EUROPEAN WIDGEON.

One record, that of a male taken by C. H. Mears at Bixby, Los Angeles County, February 16, 1904. Now in collection of J. Grinnell (Auk XXI, 1904, 383).

63. (137) **Mareca americana** (Gmelin). BALDPATE.

The American Widgeon is a common winter visitant to lakes and ponds everywhere in southern California. A few appear from the north in the latter part of September, but the main body does not generally arrive until well into October. They leave for their breeding grounds mostly in early March.

64. (139) **Nettion carolinense** (Gmelin). GREEN-WINGED TEAL.

Abundant winter visitant. Arrives mostly in the latter part of September and the month of October, and leaves in March.

65. (140) **Querquedula discors** (Linnaeus). BLUE-WINGED TEAL.

Fairly common during some winters and apparently absent during others. In parts of the United States, where it winters abundantly, it is found to be one of the earliest arrivals in the fall and one of the last to leave in the spring (Cooke, U. S. Biol. Surv. Bull. 26, 1906, 33). Seen several times by Bradford Torrey near Santa Barbara from January 21 to May 1, 1908, and from December 6, 1908, to March 16, 1909 (Condor XI, 1909, 173). Two males noted by J. H. Bowles in the same locality, January 5, 1910. I have frequently seen birds of this species that were brought in to Los Angeles taxidermists by local hunters. A female was taken by W. B. Judson near Los Angeles, October 31, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 11), and another female was taken by H. S. Swarth in the same locality, October 3, 1898 (Condor II, 1900, 14). Mr. Swarth also took a female near Los Angeles, September 28, 1900. F. S. Daggett took a male near El Monte, Los Angeles County, March 12, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 11), and J. Grinnell has a male taken at Bolsa Chica, Orange County, October 16, 1907. L. Belding saw an adult male that was shot in El Cajon Valley, about fifteen miles from San Diego, in April, 1881. F. Stephens took a pair at Agua Caliente, San Diego County, in March, 1886 (Belding, Zoe II, 1891, 97), and C. B. Linton took a female at National City, October 25, 1906.

66. (141) **Querquedula cyanoptera** (Vieillot). CINNAMON TEAL.

Abundant in spring and fall. Less plentiful in summer and mid-winter. Breeds rather commonly around grass-bordered lakes and ponds, south to San Diego County, and winters in small numbers as far north as Santa Barbara (Torrey, Condor XII, 1910, 80). I have noted young birds in Los Angeles

County by the middle of May, and O. W. Howard found an incomplete set of five fresh eggs at Nigger Slough, Los Angeles County, May 25, 1911. I found the species common at San Jacinto Lake, Riverside County, May 27, 28, 1911 (Condor XIII, 1911, 158), and C. S. Sharp records it as breeding near Escondido, San Diego County (Condor IX, 1907, 86).

67. (142). **Spatula clypeata** (Linnaeus). SHOVELLER.

The Shoveller is an abundant winter visitant, arriving mostly in October and leaving in March and early April. A few remain through the summer and undoubtedly breed, but I know of no sets of eggs having been taken in this locality. I have frequently seen the birds on fresh water ponds of Los Angeles County in summer, and on May 27, 28, 1911, I noted several pairs at San Jacinto Lake, Riverside County (Condor XIII, 1911, 158). E. E. Eckdale informed H. J. Lelande that he has seen Shovellers accompanied by young in the vicinity of Los Angeles.

68. (143) **Dafila acuta** (Linnaeus). PINTAIL.

The "sprig" is the most abundant of the larger ducks during the winter season. A few arrive from the north in September, but the main body does not show up until well along in October. It leaves mostly in March. Breeds in small numbers at Bear Lake in the San Bernardino Mountains, and also on some of the lakes at lower altitudes, south to San Jacinto Lake, Riverside County. I have noted this bird at Nigger Slough, Los Angeles County, in summer, and found it rather common at San Jacinto Lake in May, 1911. On May 28, a female accompanied by four young was seen at the latter point (Condor XIII, 1911, 158).

69. (144) **Aix sponsa** (Linnaeus). WOOD DUCK.

Occasional in winter, but much rarer than formerly. According to C. P. Streater, occasionally met with in 1885, beyond the Santa Ynez Mountains, about ten miles from Santa Barbara (Orn. & Ool. XI, 1886, 90). Formerly recorded by B. W. Evermann as breeding in Ventura County (Auk III, 1886, 89). Antonin Jay informs me that twenty-five or thirty years ago he occasionally saw the species near Los Angeles and shot several specimens. The following records are all that I have seen in late years. Male of the year in nearly adult plumage, received by R. Reynolds, the Los Angeles taxidermist, killed near Oxnard, Ventura County, about November 6, 1905 (Grinnell, Condor VIII, 1906, 29). Adult male, also mounted by Mr. Reynolds, taken by W. B. Powers near Redlands, San Bernardino County, October 2, 1909. Adult male, now in collection of M. F. Gilman, shot by his brother at Banning, Riverside County, in April, 1907. Male, seen by C. S. Sharp, shot at Ramona, San Diego County, in November, 1905 (Condor VIII, 1906, 75).

70. (146) **Marila americana** (Eyton). REDHEAD.

Common winter visitant. Less plentiful in summer. The majority arrive in October and leave in March. A few remain through the summer and breed on fresh water marshes in May and June. I found a nest containing nine piped eggs at Nigger Slough, Los Angeles County, May 13, 1911; and Antonin Jay found a nest containing eleven fresh eggs of the Redhead and four eggs of the Ruddy Duck, in the same locality, May 31, 1903. On May 28, 1911, I

found the Redhead breeding commonly at San Jacinto Lake, Riverside County. Four nests examined on that date contained fifteen, seventeen, eighteen and twenty-seven eggs respectively. The last was probably the product of at least two females (Condor XIII, 1911, 158).

71. (147) **Marila valisineria** (Wilson). CANVAS-BACK.

Common winter visitant to the marshes. Arrives late in October and leaves mostly in March.

72. (148) **Marila marila** (Linnaeus). SCAUP DUCK.

The larger "blue-bill" is an occasional winter visitant, mostly near the coast. South at least to San Diego. J. G. Cooper recorded this species as common in his time along the whole coast of California, from October to April (B., Br. & Ridg., W. B. N. A. II, 1884, 19), but in recent years they have been noted only occasionally. H. J. Lelande informs me that he secures a few of these birds each year on the gun clubs of Los Angeles County. F. S. Daggett has a male taken by Ex-Governor Markham at Bixby, Los Angeles County, December 20, 1899 (Condor II, 1900, 19). A specimen was taken near San Diego by A. Cassidy in the early 50's (Baird, Pac. R. R. Rep. IX, 1858, 791), and C. B. Linton took a male at National City, San Diego County, November 9, 1906.

73. (149) **Marila affinis** (Eyton). LESSER SCAUP DUCK.

The smaller "blue-bill" is a common winter visitant along the coast and on larger bodies of water inland. Arrives late in October and remains well into April. Two birds, a drake and duck—or young male—were noted by Bradford Torrey, June 6, 15 and 16, 1910, on a small fresh water lake near Santa Barbara (Condor XII, 1910, 204).

74. (150) **Marila collaris** (Donovan). RING-NECKED DUCK.

Rare winter visitant. H. S. Swarth took a male and three females near Los Angeles, October 15, 1898 (Condor II, 1900, 14). Mr. Swarth also saw one bird in the same locality December 14, following, and took a pair January 8, 1900. These are the only southern California records I have seen.

75. (151) **Clangula clangula americana** Bonaparte. GOLDEN-EYE.

Although J. G. Cooper reported this duck common in his time along the whole coast of California in winter (B., Br. & Ridg., W. B. N. A. II, 1884, 46), it has only been noted occasionally of late years. L. Peyton has taken a few specimens in the marshes of Ventura County, and H. S. Swarth has noted it in the vicinity of Los Angeles (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 12). A. M. Shields took a male at Ballona, Los Angeles County, December 14, 1894 (Grinnell, l. c.), and A. Fenyes took a pair near Newport, Orange County, January 5, 1901 (Daggett, Condor III, 1901, 47). W. B. Judson took a female near Huntington Beach, Orange County, December 28, 1911.

76. (153) **Charitonetta albeola** (Linnaeus). BUFFLE-HEAD.

Generally a common winter visitant, especially on salt water lagoons. Arrives in late October and early November and leaves mostly in March and early

April. Rare during some winters. I found this species fairly common at Nigger Slough, Los Angeles County, April 22, 1910, and saw an adult male in the same locality, May 1, following. J. G. Cooper noted the Buffle-head abundant at San Diego from October to April 20 (B., Br. & Ridg., W. B. N. A. II, 1884, 49).

77. (154) **Harelda hyemalis** (Linnaeus). OLD-SQUAW.

Rare winter visitant, south to San Diego. H. W. Henshaw took a female of this species at Santa Barbara, June 9, 1875 (Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 274). In the Cline collection of mounted birds are two males taken in Los Angeles County in the early 80's. A male and female in the collection of F. S. Daggett, were shot by E. R. Hull near Newport, Orange County, November 28, 1900 (Condor III, 1901, 15). L. Belding took a specimen at San Diego, January 13, 1896 (Anthony, Auk XIII, 1896, 172).

78. (163) **Oidemia americana** Swainson. AMERICAN SCOTER.

Occurs occasionally in winter along the California coast, in company with the other surf ducks. South rarely to Catalina Island. Two pairs were noted by R. H. Beck at Monterey in November, 1909 (Proc. Cal. Acad. Sci., ser. 4, vol. III, 1910, 69). H. W. Henshaw took a specimen at Santa Cruz Island in the summer of 1875 (Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 275). J. G. Cooper records this species as occurring along the whole coast of California (B., Br. & Ridg., W. B. N. A. II, 1884, 89). He informed J. Grinnell that he had taken it at Catalina Island (Pub. 2, Pasadena Acad. Sci., 1898, 12). This is our most southern record.

79. (165) **Oidemia deglandi** Bonaparte. WHITE-WINGED SCOTER.

Very common winter visitant along the coast and around the Santa Barbara Islands. Arrives in September and October and leaves mostly in April. Non-breeding birds of this and the next species are plentiful on the ocean throughout the summer.

80. (166) **Oidemia perspicillata** (Linnaeus). SURF SCOTER.

Most abundant of the surf ducks. The majority of this species arrive from the north in October and November and leave in April. I noted an adult male at Santa Rosa Island, June 8, 1910.

81. (167) **Erismatura jamaicensis** (Gmelin). RUDDY DUCK.

The little "wire-tail" is a common resident of southern California throughout the year. It breeds in tule marshes from the middle of April until June. I found a set of seven half-incubated eggs at Nigger Slough, Los Angeles County, May 1, 1910, and another set of seventeen slightly incubated eggs, in the same locality, June 2, following. Antonin Jay found a nest containing an incomplete set of three eggs near Wilmington, Los Angeles County, June 10, 1900.

82. (169) **Chen hyperboreus hyperboreus** (Pallas). LESSER SNOW GOOSE.

Common winter visitant to the lowlands, south to Lower California. Arrives about the first part of October and leaves mostly in March and April.

This goose, in company with other species, feeds in large numbers on the grain fields and pasture lands, mostly at night, remaining out at sea during the day.

83. (170) **Chen rossi** (Cassin). ROSS GOOSE.

Occurs in winter in limited numbers in company with the last species. South at least to Orange County. I have seen many of these birds in the Los Angeles markets, brought in from the surrounding country. E. Davis has found them fairly common in winter near Santa Ana, and F. S. Daggett records a specimen taken by A. Fenyes near Newport, Orange County, November 10, 1900 (Condor III, 1901, 15).

84. (171a) **Anser albifrons gambeli** Hartlaub. WHITE-FRONTED GOOSE.

This goose, known to hunters as the "checker-breast," is a common winter visitant to suitable localities in the lowlands. According to L. Belding, it is the first goose to arrive in California and the last to leave, appearing early in September and remaining until the first part of May (Zoe III, 1892, 98). The main body, however, does not put in its appearance until November, and it leaves in April.

85. (172) **Branta canadensis canadensis** (Linnaeus). CANADA GOOSE.

According to the last A. O. U. *Check-List*, this species ranges south to southern California in winter. It is not nearly so common, however, as others of the genus. J. Grinnell has a specimen taken near Los Angeles in winter, and F. S. Daggett has found it not uncommon in winter at Bixby, Los Angeles County. W. W. Cooke states that the Canada Goose is more common in the interior of California than along the coast. He says further that it is about the earliest water bird to migrate in the spring (U. S. Biol. Surv. Bull. 26, 1906, 72).

86. (172a) **Branta canadensis hutchinsi** (Richardson). HUTCHINS GOOSE.

Common winter visitant to the lower country. Arrives about the middle of October and remains generally until the middle of April. According to A. W. Anthony, this goose goes at least a hundred miles south of San Diego and is numerous in parts of San Diego County in winter (Belding, Zoe III, 1892, 99).

87. (172b) **Branta canadensis occidentalis** (Baird). WHITE-CHEEKED GOOSE.

Although the A. O. U. *Check-List* and other lists have repeatedly given the range of this sub-species as "south to southern California in winter," I have yet to learn of a typical specimen being taken in this locality. There seems to be need of a revision of this whole group by some one who has plenty of material to work with. H. S. Swarth says: "I have examined hundreds of geese in the California markets, but have yet to see a *large* goose with a white half-collar at the base of the neck, and with a black line dividing the white cheek patches, supposedly the distinguishing characters of this sub-species" (Univ. Calif. Publ. Zool. VII, 1911, 47).

According to L. Belding, the White-cheeked Goose seldom arrives in cen-

tral California before the middle of November, sometimes considerably later, and not until comparatively cold weather sets in. Mr. Belding further states that he did not note this goose as far south as San Diego County, but he was informed that specimens had been taken at La Jolla, twelve miles north of San Diego (Zoe III, 1892, 100).

88. (172c) ***Branta canadensis minima*** Ridgway. CACKLING GOOSE.

According to L. Belding, this is probably the most abundant of the geese in California in winter. They arrive the first part of October and leave in April. Mr. Belding further states that he has seen this bird in San Diego County and believes that it goes as far south as Hutchins Goose (Zoe III, 1892, 100).

89. (174) ***Branta nigricans*** (Lawrence). BLACK BRANT.

Regular winter visitant along the coast. Arrives about October 1 and leaves mostly in the latter part of April. According to L. Belding, scatters along the coast to about 300 miles south of San Diego in winter (Zoe III, 1892, 101). H. S. Swarth has found this species common in winter in the kelp beds off San Pedro. J. E. Law has a male taken near Los Angeles, November 23, 1905, and F. S. Daggett records a pair taken by E. R. Hull near Newport, Orange County, January 1, 1901 (Condor III, 1901, 47). In the winter of 1861-62, J. G. Cooper noted these birds in large numbers at San Diego. They appeared in October and remained until April 20 (B., Br. & Ridg., W. B. N. A. I, 1884, 473).

90. (178) ***Dendrocygna bicolor*** (Vieillot). FULVOUS TREE-DUCK.

Common in the marshes in fall and spring. A few remain through the summer and breed in the latter part of May and the month of June around fresh water ponds and lakes. "While the species as a whole moves north to breed and south to winter—these movements occurring in April and October—a few remain throughout the year in most of the range" (Cooke, U. S. Biol. Surv. Bull. 26, 1906, 83). In the Salvin-Godman collection in the British Museum is an adult female taken at San Diego in December, and an adult specimen taken at Washoe Lake, Nevada, in winter. (Salvadori, Cat. Birds Brit. Mus. xxvii, 1895, 152).

Antonin Jay found a nest containing fourteen fresh eggs at Nigger Slough, Los Angeles County, May 30, 1903, and found another nest June 7, the same year, which contained thirteen eggs, incubation commenced. I found the birds fairly plentiful at San Jacinto Lake, Riverside County, May 27, 28, 1911 (Condor XIII, 1911, 158).

91. (180) ***Olor columbianus*** (Ord). WHISTLING SWAN.

Regular winter visitant in limited numbers to lakes and ponds, mostly near the coast. South at least to Orange County. Generally arrives in November and remains until the first part of April. I have seen several birds of this species that were shot near Los Angeles and have occasionally noted them in small flocks on the sloughs of Los Angeles and Orange counties.

92. (187) **Plegadis guarauna** (Linnaeus). WHITE-FACED GLOSSY IBIS.

Common in the lower country in spring, summer and fall. Said to have been seen in winter, but I know of no authentic records for that season. Rather rare in Ventura and Santa Barbara counties. One specimen was taken by B. W. Evermann at Santa Paula May 14, the only one seen by him in Ventura County (Auk III, 1886, 91). S. Peyton saw six birds on the Sespe River, Ventura County, in July, 1910, and J. S. Appleton has noted the species in the Simi Valley in late summer. It breeds plentifully at San Jacinto Lake, Riverside County, in May. I visited this lake, accompanied by Antonin Jay, May 27, 28, 1911. Two or three hundred nests were noted, about half of which contained young. The others mostly held incubated eggs, but a few fresh sets were found (Condor XIII, 1911, 159). C. S. Sharp found about a dozen birds nesting at Guajome, near Escondido, San Diego County, in 1911 (Condor IX, 1907, 91).

93. (188) **Mycteria americana** Linnaeus. WOOD IBIS.

Irregular summer visitant, north at least to Santa Barbara County. Not known to breed within our limits. Its occurrence has been noted as follows: Flock of about twenty-five birds seen by J. Grinnell and F. S. Daggett near Oceanside, San Diego County, August 5, 1902 (Condor V, 1903, 18). Several birds seen on one occasion in early summer by H. E. Wilder along the Santa Ana River, near Riverside. Eight birds seen by J. B. Feudge near San Bernardino in the summer of 1891. Mr. Feudge also saw three birds in the same locality, June 5, 1902. One of these was taken (Condor V, 1903, 79). A large flock was noted by J. F. Illingworth on barley fields near Claremont, Los Angeles County, in June, 1897. On June 20 a specimen was secured, and a few days later a local hunter shot another (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 14). G. H. Coffin shot one bird at Bixby, Los Angeles County, August 15, 1902, and on August 23 another was taken (Daggett, Condor V, 1903, 18). During June and July, 1911, this species was reported several times from the marshes lying between Los Angeles and the coast. Antonin Jay saw a flock of about twenty-five birds at Watson's Lake on July 2, and J. E. Law secured a specimen at Dominguez the same day (Condor XIV, 1912, 41). H. J. Lelande noted a flock of thirteen birds between Los Angeles and Venice on June 30, and saw them daily in that locality until July 19. H. Robertson saw six or eight birds at Nigger Slough, July 16.

J. S. Appleton has a mounted bird of this species that was shot in the Simi Valley, Ventura County, in the summer of 1904. Lawrence and Sidney Peyton saw a flock of about twenty birds on the Sespe River, Ventura County, in the summer of 1901. According to J. G. Cooper, small flocks came to Saticoy, Ventura County, in June, 1872 and 1873. One also was seen near Santa Barbara (Auk IV, 1887, 90).

94. (190) **Botaurus lentiginosus** (Montagu). AMERICAN BITTERN.

Common in marsh lands in fall, winter and spring. A few remain through the summer and breed. The majority arrive in September and leave in early May. H. Robertson took three fresh eggs at Alamitos Bay, Los Angeles County,

May 14, 1899 (Bull. Cooper Orn. Club 1, 1899, 94). Antonin Jay took five fresh eggs at Nigger Slough, Los Angeles County, May 28, 1903, and O. W. Howard found a nest in the same locality, May 25, 1911. It contained three young and one addled egg. I found the birds fairly common at San Jacinto Lake, Riverside County, May 27, 28, 1911 (Condor XIII, 1911, 159).

95. (191) ***Ixobrychus exilis*** (Gmelin). LEAST BITTERN.

Fairly common summer resident, but, owing to its secretive habits, easily overlooked. I know of no winter records for the species in this locality, nor have I seen any definite data as to the time of its migrations on the Pacific coast. I took a set of five half-incubated eggs at Nigger Slough, Los Angeles County, May 16, 1911, and Antonin Jay took five fresh eggs in the same locality, June 7, 1903. Mr. Jay and myself also found it nesting rather commonly at San Jacinto Lake, Riverside County, May 27, 28, 1911. Seven nests were found, one of which contained one fresh egg, one five eggs, hatching, and the others held sets, variously incubated (Condor XIII, 1911, 159).

96. (194) ***Ardea herodias herodias*** Linnaeus. GREAT BLUE HERON.

This bird, generally known as the "blue crane," formerly nested in many localities in southern California. At the present time, although the birds are fairly common in the marshes, nesting colonies are very few in the coast district. J. G. Cooper took eggs near Santa Barbara and San Diego (B., Br. & Ridg., W. B. N. A. I, 1884, 16). A colony formerly nested near Santa Monica, Los Angeles County, but have not done so since about 1901. W. L. Chambers took three sets, each of four heavily incubated eggs, from this colony, May 13, 1895 (Condor IV, 1902, 47). E. Davis has taken eggs near Santa Ana, Orange County, and H. J. Lelande and O. W. Howard found two small colonies nesting near San Onofre, San Diego County, in late March, 1905. Two sets of fresh eggs were taken on March 30. A few pairs may be seen at all seasons of the year around the Santa Barbara Islands, where they nest on the cliffs.

97. (196) ***Herodias egretta*** (Gmelin). EGRET.

Thirty or forty years ago this beautiful bird was a common winter resident of southern California. It was also frequently seen in the summer and may have nested occasionally, as it is known to have bred at Tulare Lake, Kings County. J. G. Cooper found it abundant in his time. He met with it near Santa Barbara in May (B., Br. & Ridg., W. B. N. A. I, 1884, 26). According to B. W. Evermann it was formerly common in the Ventura marshes (Auk III, 1886, 91), and in 1885 C. P. Streater noted it as a winter resident at Santa Barbara, though not very common (Orn. & Ool. XI, 1886, 89).

The deadly and relentless persecution of the plume hunter has resulted in almost complete extermination of the species. At the present time it is seldom met with in this locality, and never seen in great numbers. During the last ten years I have seen three or four birds in the marshes of Los Angeles and Orange counties. I saw a bird in a local taxidermist's shop that was killed at Bolsa Chica, Orange County, October 15, 1906. C. B. Linton and Antonin Jay noted two or three birds at Alamitos Bay, Los Angeles County,

in the spring of 1911. Mr. Linton also saw several birds at Buena Vista Lake, Kern County, in the summer of 1908, and he believes that they were breeding somewhere in that locality. H. S. Swarth noted about a dozen birds at Alamitos Bay, May 16, 1901, and saw several at Bixby, August 12, the same year. I saw one bird of this species at San Jacinto Lake, Riverside County, May 29, 1911 (Condor XIII, 1911, 160).

98. (197) **Egretta candidissima candidissima** (Gmelin). SNOWY EGRET.

Like the last species, this bird was formerly common in southern California. J. G. Cooper found it plentiful at all seasons along our coast (B., Br. & Ridg., W. B. N. A. I, 1884, 30). He saw one bird at an elevation of 4500 feet in the Cuyamaca Mountains, San Diego County, in the spring of 1862 (Am. Nat. VIII, 1874, 18). It was noted by B. W. Evermann as formerly common in Ventura County marshes (Auk III, 1886, 91), and by C. P. Streater as a common winter visitant at Santa Barbara in 1885 (Orn. & Ool. XI, 1886, 89). W. H. Wakely, a taxidermist of Pasadena, informed J. Grinnell that in the early 80's he received many specimens from hunters in Los Angeles County (Pub. 2, Pasadena Acad. Sci., 1898, 14).

At the present time the species is rare in southern California. I have never met with it myself, but have been told by hunters that it may be occasionally seen around the more remote lakes of the interior. A rigid enforcement of protecting laws is the only thing that will save this and the preceding species from absolute extinction.

99. (201c) **Butorides virescens anthonyi** (Mearns). ANTHONY GREEN HERON.

Common migrant. A few remain through the summer and breed in the willow thickets of the lower country. Occasional in winter, north at least to San Bernardino, where a bird was noted by J. B. Feudge on January 3, 1903 (Condor V, 1903, 80). S. Peyton took a set of six heavily incubated eggs of this bird from an old crow's nest near Sespe, Ventura County, May 12, 1910 (Condor XIII, 1911, 35). Alphonse Jay took four fresh eggs near Whittier, Los Angeles County, May 29, 1898.

100. (202) **Nycticorax nycticorax naevius** (Boddaert). BLACK-CROWN-ED NIGHT HERON.

Common resident locally in suitable localities, though not as generally distributed as formerly. Breeds during the latter part of April and early May. Until about 1906, a small colony nested at Bixby, Los Angeles County, and W. Chamberlain has taken eggs near Newport, Orange County. It breeds rather commonly at San Jacinto Lake, Riverside County, in company with the White-faced Glossy Ibis. On May 27, 28, 1911, I found several nests in this locality. They all contained young birds except one, which held three half-incubated eggs. In one case the young were nearly full grown (Condor XIII, 1911, 160). E. A. Mearns and A. W. Anthony noted this species on San Clemente Island in August, 1894 (Bull. 56, U. S. Nat. Mus., 1907, 141).

101. (205) **Grus canadensis** (Linnaeus). LITTLE BROWN CRANE.

As this bird usually migrates over southern California without stopping, it is impossible to estimate its abundance, particularly because at the height that it generally maintains in migration, it can not be differentiated with certainty from the next species. J. Grinnell notes the two following records for the Little Brown Crane in this vicinity. One specimen taken from a flock of twenty-five or thirty birds by R. Reynolds, near Newport, Orange County, some time in the late 90's. Mr. Reynolds stated that he saw another flock of about a hundred birds at the same time and place. Mr. Grinnell saw this bird while it was in the possession of Mr. Reynolds and confirms his identification. The other record noted by Mr. Grinnell is that of an adult male and immature female, now nos. 11440 and 11441 collection of Outram Bangs. These birds were secured fresh in the Los Angeles market by H. S. Swarth, March 21, 1904. They were said to have been shot on the Centinela ranch, about twelve miles southwest of Los Angeles (Condor XI, 1909, 128). W. Frank took an immature bird near Long Beach, Los Angeles County, March 24, 1912. L. H. Miller had a mounted specimen of the Little Brown Crane that was taken with another bird, apparently of the same species, by his brother, Holmes Miller, near Riverside, February 19, 1893.

102. (206) **Grus mexicana** (Müller). SANDHILL CRANE.

Common during migrations, which occur in September and October, and in March and April. Occasional during the winter. This species has been noted plentifully in all parts of southern California during its migrations. I have often seen them flying directly over Los Angeles. F. S. Daggett has observed them on grain fields near Pasadena in winter (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 15).

103. (210.1) **Rallus levipes** Bangs. LIGHT-FOOTED RAIL.

This species, originally described from specimens taken at Newport, Orange County (Proc. New Eng. Zool. Club I, 1899, 45), is a common resident on salt and brackish marshes near the coast, but becoming scarcer every year. At extreme high tides it swims on the water after the fashion of the Coot, and, as it is easily approached, it is killed in large numbers by the hunters. In many marshes where it was formerly common it has been practically exterminated. Eggs are generally deposited in April and early May. I found a set of nine fresh eggs at Bay City, Orange County, March 19, 1910, and a set of nine, half incubated, at Nigger Slough, Los Angeles County, June 14, 1906.

104. (212) **Rallus virginianus** Linnaeus. VIRGINIA RAIL.

Fairly common resident on both salt and fresh water marshes, south at least to San Diego County. Breeds in April and May. W. L. Chambers took two sets of fresh eggs at Ballona, Los Angeles County, April 13, 1902, and O. W. Howard took a set of six eggs near Newport, Orange County, May 13, 1906. L. Peyton found a nest containing two young birds and one egg, near Sespe, Ventura County, in June, 1907. A. M. Ingersoll informs me that the Virginia Rail is rare during the breeding season in San Diego County. - He

found a nest containing pieces of egg shells, near Ramona, June 2, 1888. An old bird with several young was seen close by.

105. (214) **Porzana carolina** (Linnaeus). SORA.

Fairly common resident, south at least to San Diego County. Breeds at about the same time as the last species. C. B. Linton took a set of six slightly incubated eggs near Whittier, Los Angeles County, April 18, 1896, and W. L. Dawson took a set of six eggs at Nigger Slough, May 13, 1911. A. M. Ingersoll has seen this rail on fresh water ponds in the vicinity of San Diego in spring, and believes that they breed occasionally in that locality.

106. (215) **Coturnicops noveboracensis** (Gmelin). YELLOW RAIL.

One record. J. H. Henderson took a male at Newport Bay, Orange County, December 12, 1896. Now no. 2077 collection P. I. Osburn (Condor XIII, 1911, 108).

107. (216.1) **Creciscus coturniculus** (Ridgway). FARALLON RAIL.

Rather rare resident, locally, mostly on salt water marshes. J. S. Appleton saw a bird of this species in a marsh near Hueneme, Ventura County, in the latter part of March, 1898. G. F. Morcom saw one at Ballona, Los Angeles County, May 16, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 16), and L. H. Miller took a specimen at Riverside, August 13, 1892 (Orn. & Ool. XVIII, 1893, 104).

So far as I know, the only place in southern California where eggs of the Black Rail have been taken, is in the salt marshes bordering San Diego Bay. A. M. Ingersoll has taken several sets and he informs me that he knows of over twenty sets having been taken by different collectors in that vicinity during the last few years. The sets are usually of from four to eight eggs each, and are deposited between the first and tenth of April.

108. (219) **Gallinula galeata** (Lichtenstein). FLORIDA GALLINULE.

Common resident on tule-bordered ponds and lakes of the lower country. Breeds mostly in May and June. Antonin Jay took eight fresh eggs at Nigger Slough, Los Angeles County, May 5, 1901, and a set of five eggs, incubation commenced, in the same locality, June 30, 1895. A. M. Ingersoll took a set of nine eggs at San Jacinto Lake, Riverside County, June 7, 1897.

109. (221) **Fulica americana** Gmelin. COOT.

The "mud hen" is an abundant resident of all tule-bordered ponds and lakes, breeding in the lower country from April 15 to June 15, later at higher altitudes. J. Grinnell found eggs at Bear Lake, 6750 feet altitude in the San Bernardino Mountains, late in July (Univ. Calif. Publ. Zool. v, 1908, 54).

110. (222) **Phalaropus fulicarius** (Linnaeus). RED PHALAROPE.

Abundant migrant on the ocean, a few remaining throughout the winter. Fall migration, late July to November. Spring migration, early April to early June. Irregular along the mainland coast. Most plentiful around the islands. Occasional on inland bodies of water. C. P. Streater took one specimen at Santa Barbara in the fall of 1885 (Orn. & Ool. xi, 1886, 89). J. H. Bowles

noted the species in the same locality in the fall, from September 26 (1910) to November 30 (1911), and Bradford Torrey saw it May 25 and 31, 1911 (Condor xiv, 1912, 6). I noted two birds dead on the beach at Hyperion, Los Angeles County, November 15, 1911, and found it fairly common at Long Beach, December 11, following. In late November and early December, 1907, C. B. Linton and myself found it very abundant around Santa Cruz and Anacapa islands, feeding in the kelp beds near shore. By December 5, the majority had disappeared to the southward (Condor x, 1908, 126). E. A. Mearns and A. W. Anthony took specimens at San Clemente Island in late August, 1894 (Bull. U. S. Nat. Mus. 56, 1907, 141). Mr. Anthony also took three specimens off San Diego, December 3, 1895 (Swarth, Condor xii, 1910, 108). According to R. H. Beck, a few of these birds linger through December and January as far north as Monterey (Proc. Cal. Acad. Sci., ser. 4, vol. iii, 1910, 70). Specimens were taken in the fall by W. Richardson on a reservoir near Pasadena (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 16); and F. K. Jenks has a mounted bird that was found dead by J. C. Sunby on the shore of the lake at Westlake Park, Los Angeles, November 1, 1911.

111. (223) **Lobipes lobatus** (Linnaeus). NORTHERN PHALAROPE.

Common migrant along the coast and on inland bodies of water. Fall migration, late July to late October. Spring migration, late April to June. Noted at Santa Barbara by Bradford Torrey and J. H. Bowles, in 1911, from August 4 to November 16 and from May 8 to June 16 (Condor xiv, 1912, 6). J. G. Cooper saw the species on ponds in Ventura County every month during the summer except June (Auk iv, 1887, 90). I have found it very common at Nigger Slough, Los Angeles County, in spring. H. S. Swarth has taken specimens in this locality as late as June 19 (1897). F. S. Daggett found it in large flocks on fresh water ponds at Bixby, Los Angeles County, August 10 to August 27, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 16). C. B. Linton took two specimens from a large flock at Santa Cruz Island, October 21, 1908.

112. (224) **Steganopus tricolor** Vieillot. WILSON PHALAROPE.

Occasional migrant. May sometimes breed around mountain lakes. Two of these birds were noted by Bradford Torrey at Santa Barbara from April 30 to May 6, 1909 (Condor xi, 1909, 173), and during the fall of 1910, J. H. Bowles noted them in the same locality as follows: A pair seen on July 22, three birds on August 3 and a pair on September 8. One of the latter was shot (Condor xiii, 1911, 35). Two more birds were seen by Mr. Bowles on May 20, 1911 (Condor xiv, 1912, 7). A specimen was taken by E. Heller near Riverside in the winter of 1891 (Condor iii, 1901, 100). J. Grinnell saw several small flocks at Bear Lake in the San Bernardino Mountains, from July 28 to August 2, 1905. Four specimens out of five taken at this time were birds of the year and Mr. Grinnell believes it possible that they were raised in the immediate vicinity (Univ. Calif. Publ. Zool. v, 1908, 55).

113. (225) **Recurvirostra americana** Gmelin. AVOCET.

Common in marshy districts during migrations, which occur in March

and April and from August to October. I have never seen them in mid-winter, but they probably occur occasionally at that season. They were noted by J. S. Newberry at San Francisco Bay in the winter of 1885 (Pac. R. R. Rep. VI, 1857, 99), and by E. W. Nelson at Lone Pine, Inyo County, in December, 1890, and at Morro Bay, San Luis Obispo County, in November, 1891 (Fisher, N. A. Fauna No. 7, 1893, 22). A few probably breed around the more remote lakes of southern California. They formerly nested commonly at Nigger Slough, Los Angeles County, but have not done so of late years. E. Davis has taken eggs at Alkali Lakes, near Santa Ana, from May 1 to August 1 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 16). Several pairs of birds were seen by H. W. Henshaw on Santa Cruz Island (Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 270), and W. A. Jeffries noted the species at Santa Barbara, April 19, 1883 (Auk VI, 1889, 223). They were also noted in the latter locality by J. H. Bowles, from March 18 to May 20, October 12 and November 1, 1911, and by Bradford Torrey on September 20, the same year (Condor XIV, 1912, 7).

114. (226) **Himantopus mexicanus** (Müller). BLACK-NECKED STILT.

Common summer resident. Rare in winter. Arrives mostly in March and April and leaves during the month of October. Breeds from May 1 through July, most abundantly from May 15 to June 15. I have found the Stilt nesting commonly at Nigger Slough, Los Angeles County, and E. Davis has taken eggs at Alkali Lakes, near Santa Ana. J. Grinnell saw a flock of about twenty-five birds at Bear Lake, San Bernardino Mountains, July 30, 1905 (Univ. Calif. Publ. Zool. V, 1908, 55). Mr. Grinnell also took a male on San Nicolas Island, May 25, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 26). H. Robertson took a specimen at Bixby, Los Angeles County, January 5, 1910.

115. (230) **Gallinago delicata** (Ord). WILSON SNIPE.

Common in fall, winter and spring in grassy swamps and wet pasture lands. Arrives mostly in late August and September, and leaves in March and early April. Noted by J. H. Bowles at Santa Barbara as late as April 27 (1911) (Condor XIV, 1912, 7).

116. (232) **Macrorhamphus griseus scolopaceus** (Say). LONG-BILLED DOWITCHER.

Fairly common during migrations. Occasional in winter, at least as far north as San Diego. Arrives mostly in late August and September and leaves during the latter part of March and the month of April. Noted by J. H. Bowles at Santa Barbara in the fall from July 18 (1910) to November 1 (1911), and in the spring from March 10 to May 2 (1910) (Condor XIV, 1912, 8). H. S. Swarth took a male at Ballona, Los Angeles County, April 19, 1901, and E. A. Mearns and A. W. Anthony noted the species on San Clemente Island in the latter part of August, 1894 (Bull. 56, U. S. Nat. Mus., 1907, 141). C. B. Linton took two specimens in the San Diego marshes, September 3, 1906, and found them fairly common in that locality during the following winter.

117. (234) ***Tringa canutus*** Linnaeus. KNOT.

Probably a regular migrant in small numbers. So far detected only in the fall. A. B. Howell and J. H. Bowles took several specimens at Santa Barbara during late August and early September, 1911 (Condor XIV, 1912, 8). The first noted were two birds taken by Mr. Bowles on August 24 and the latest was a single bird seen by Mr. Howell on September 9. Two males and a female were taken by C. B. Linton from a flock of about thirty birds at Alamitos Bay, Los Angeles County, September 18, 1907, and I took a male in the same locality October 10, following. C. Lamb took a male at Anaheim Landing, Orange County, October 3, 1909 (Condor XI, 1909, 208). H. W. Marsden took two young males at Pacific Beach, San Diego County, September 8, 1904 (Bishop, Condor VII, 1905, 141). Mr. Marsden also took a male and two females in the same locality, October 7 and 9, 1903 (Dwight, Auk XXI, 1904, 78).

118. (239) ***Pisobia maculata*** (Vieillot). PECTORAL SANDPIPER.

Rare migrant. So far noted on our southern California coast only at Santa Barbara. W. W. Cooke says of this species: "A few pass south along the Pacific coast to the state of Washington (Suckley) and there are two records for California—Mill Valley Junction, September 14, 1896 (Mailliard), and Farallon Islands, September 4, 1884 (specimen in U. S. National Museum). The species reappears again in Lower California, where it is fairly common during fall migration in the Cape region (Brewster)" (U. S. Biol. Surv. Bull. 35, 1910, 36). We have the following records for the species in southern California: Two birds seen at Santa Barbara by Bradford Torrey on September 18, three on September 20 and one on September 21 and 23, 1909 (Condor XII, 1910, 44). Several birds noted in the same locality by J. H. Bowles, September 8, and one collected September 9, 1910 (Condor XIII, 1911, 35). Mr. Bowles also saw a bird on August 18 and another on August 20, 1911 (Condor XIV, 1912, 8), and noted it in spring migration April 14, 1910 (Auk XXVIII, 1911, 172).

119. (241) ***Pisobia bairdi*** (Coues). BAIRD SANDPIPER.

Migrates mainly east of the Sierras, so far having been detected along our southern California coast only in the fall, as follows: A. B. Howell and J. H. Bowles found the species fairly common on marsh lands near Santa Barbara in the fall of 1911. The earliest specimen, a male, was taken August 11, and they were fairly plentiful from that date until about September 7 (Condor XIV, 1912, 8). H. W. Wright took a young male on Catalina Island, September 1, 1907 (Grinnell, Condor XI, 1909, 139), and H. W. Marsden took a young female at Pacific Beach, San Diego County, September 8, 1904 (Bishop, Condor VII, 1905, 141).

120. (242) ***Pisobia minutilla*** (Vieillot). LEAST SANDPIPER.

Abundant migrant along the coast and on inland bodies of water. Remains through the winter in considerable numbers. Arrives mostly in August and

September and leaves in April and the first part of May. Non-breeding birds are frequently seen during the summer months.

121. (243a) **Pelidna alpina sakhalina** (Vieillot). RED-BACKED SAND-PIPER.

Common migrant along the coast, occasional on inland ponds. Less plentiful in mid-winter. Most abundant in fall from September 15 to November 1, and in spring from April 10 to May 7. I saw several birds of this species at Nigger Slough, Los Angeles County, May 19, 1906, and found them common at Alamitos Bay, December 19, the same year.

122. (247) **Ereunetes mauri** Cabanis. WESTERN SANDPIPER.

Abundant migrant on both fresh and salt water marshes. A few remain through the winter. The fall migration occurs in September and October, and the spring migration mostly between April 1 and May 10. C. B. Linton found this species fairly common at San Diego Bay during November, December and January, 1906-7. J. H. Bowles noted it at Santa Barbara, December 5, 1909, and February 28, 1910 (Condor xiv, 1912, 9). Mr. Bowles also saw fourteen birds in the same locality, July 11, 1910.

123. (248) **Calidris leucophaea** (Pallas). SANDERLING.

Common in flocks on sandy beaches from August 15 to May 15. Occasional in summer. Most abundant in spring and fall, the majority of the species wintering to the southward. C. B. Linton noted this bird on San Nicolas Island as late as May 30, 1910, and I found it fairly common at Hyperion, Los Angeles County, May 31, the same year. H. S. Swarth took a specimen at Redondo, Los Angeles County, June 4, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 17).

124 (249) **Limosa fedoa** (Linnaeus). MARBLED GODWIT.

Common migrant along the coast, a few remaining in the fall as late as December. The first of the species begin arriving from the north early in July, and they occur along the beaches in spring as late as the middle of June. H. S. Swarth saw this bird at Alamitos Bay, Los Angeles County, May 16, 1901, and Bradford Torrey saw one bird at Santa Barbara, June 4, 1910 (Condor xii, 1910, 204). J. H. Bowles saw a bird in the latter locality, June 15, 1911 (Condor xiv, 1912, 9).

H. S. Swarth saw the Marbled Godwit at Terminal Island, Los Angeles County, in December, 1899, and C. B. Linton found it common around San Diego Bay as late as December 5, 1906. W. W. Cooke informs me that he does not consider the presence of this species in early December to be proof of its wintering in southern California as there is much southward migration after that time. I have seen no California records for January or February.

125. (254) **Totanus melanoleucus** (Gmelin). GREATER YELLOW-LEGS.

Common along the coast and on fresh water ponds during migrations. Less common in mid-winter, north at least to Santa Barbara. Seen occasionally during the summer. Arrives in September and October and leaves mostly in April. G. F. Morcom saw this species at Nigger Slough, Los Angeles County,

June 19, 1897, and H. S. Swarth noted it in the same locality in July (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 17). J. H. Bowles saw four birds at Santa Barbara, July 18, 1910, and noted one bird in the same locality, January 2, 1911 (Condor XIV, 1912, 9). C. B. Linton took a male at San Diego Bay, December 5, 1906, and a female at Long Beach, Los Angeles County, January 19, 1907.

126. (256a) **Helodromas solitarius cinnamomeus** (Brewster). WESTERN SOLITARY SANDPIPER.

Fairly common during migrations, mostly along streams of the interior. J. H. Bowles finds the Solitary Sandpiper to occur rather rarely in migrations on the grassy mud flats in the vicinity of Santa Barbara (Condor XIV, 1912, 9). His only spring record for that locality is of one bird seen April 30, 1910. He has noted it in the fall from July 22 (1910) to September 7 (1911). H. S. Swarth has found it fairly numerous along the Los Angeles River. He has seen it in the fall from August 25 (1900) to September 22 (1898), and in the spring from April 10 (1898) to May 14 (1898). It was noted by J. G. Cooper along fresh water streams of Ventura County (Auk IV, 1887, 91), and in the Cuyamaca Mountains, San Diego County (Am. Nat. VIII, 1874, 18). A. van Rossem took two birds at Bear Lake, San Bernardino Mountains, August 22, 1910, and E. A. Mearns and A. W. Anthony noted the species on San Clemente Island in late August, 1894 (U. S. Nat. Mus. Bull. 56, 1907, 141).

127. (258a) **Catoptrophorus semipalmatus inornatus** (Brewster). WESTERN WILLET.

Common along the coast and on inland bodies of water from August 15 until the latter part of April. Most abundant during the migrations which take place in August and September and in March and April. Frequently seen during the summer, but, so far, has not been found to breed in southern California. J. G. Cooper records this bird as common in winter in Ventura County marshes (Auk IV, 1887, 91). J. H. Bowles noted it at Santa Barbara, November 1, 1911 (Condor XIV, 1912, 9), and W. L. Dawson saw a bird at Carpinteria, Santa Barbara County, December 23, 1911. C. B. Linton found it common at San Diego Bay from August 18 to December 5, 1906. J. Grinnell found it quite plentiful at Bear Lake, San Bernardino Mountains, from July 28 to August 2, 1905, and took three specimens, all apparently birds of the year and probably migrants (Univ. Calif. Publ. Zool. V, 1908, 55).

I have seen this species in southern California every month during the summer. I noted it in company with Black-necked Stilts—the latter breeding—at Nigger Slough, Los Angeles County, May 17 and 28, June 2 and July 10, 1910, and found it plentiful at Bolsa Chica, Orange County, July 23, 1911. I also saw a small flock on San Miguel Island, June 17, 1910 (Condor XII, 1910, 173).

128. (259) **Heteractitis incanus** (Gmelin). WANDERING TATTLER.

Fairly common on rocky shores in fall, winter and spring. A few, undoubtedly non-breeding birds, remain through the summer. Particularly plentiful on the Santa Barbara Islands in company with Spotted Sandpipers and Turn-

stones. The migrations occur mostly in August and April. C. B. Linton has found the Tattler common on San Clemente, San Nicolas and Santa Barbara islands, from September 1 to June 12. I saw them daily on San Miguel Island from June 9 to June 23, 1910 (Condor xii, 1910, 173), and Antonin Jay noted several birds on Santa Barbara Island, July 3, 1909. J. E. Law has a male taken near Santa Monica, Los Angeles County, December 11, 1905, and I have frequently seen the species on rocky shores of the mainland during the winter months.

129. (263) **Actitis macularius** (Linnaeus). SPOTTED SANDPIPER.

Common along rocky shores from September to May. Occasional inland, mostly during migrations. A few breed as far south as Ventura County and probably even farther south in the higher mountains. I have found this species plentiful in winter around the Santa Barbara Islands and on rocky shores of the mainland, and have seen it in the Los Angeles city parks during migrations. C. B. Linton found it common at San Nicolas Island, May 18, 1909, and I saw two birds on Anacapa Island, June 5, 1910. I also saw one at Nigger Slough, Los Angeles County, May 28, 1910. J. Grinnell saw several birds at Bear Lake, San Bernardino Mountains, August 2, 1905, and a pair was noted at Dry Lake, 9000 feet altitude, July 15, 1906 (Univ. Calif. Publ. Zool. v, 1908, 56).

A set of three eggs was taken by B. Ruggles near Santa Paula, Ventura County, in May, 1892, and another set of three was taken by M. Richardson in the same locality in May, 1900. I have examined these eggs and they are undoubtedly those of the Spotted Sandpiper.

130. (264) **Numenius americanus** Bechstein. LONG-BILLED CURLEW.

This bird may be found along our coast and on inland bodies of water every month in the year. Although it has been reported as breeding in southern California, I doubt the authenticity of the records. The birds seen here in summer are probably non-breeding. It is most plentiful during migrations, but is fairly common during the winter months. Long-billed Curlews begin coming in from the north in considerable numbers the first week in July and continue to arrive until well into September. The spring migration occurs mostly during the month of April.

131. (265) **Numenius hudsonicus** Latham. HUDSONIAN CURLEW.

This species in migrations is much more abundant than the last along the seashore, but is less plentiful inland. According to ornithological authorities it winters entirely south of the United States. The first arrivals from the north appear about the first week in July, and by July 10 they are abundant along the beaches. They have mostly disappeared to the southward by the first of October. The return migration begins about March first and continues well into May. I saw a flock of twenty-five or thirty birds at Nigger Slough, Los Angeles County, May 25, 1907, and J. H. Bowles saw eleven birds at Santa Barbara, June 2, 1911 (Condor xiv, 1912, 10).

132. (270) **Squatarola squatarola** (Linnaeus). BLACK-BELLIED PLOVER

Common migrant along the coast, less plentiful during the winter. Fall

migration, September 1 to October 20. Spring migration, April 1 to May 15. A. B. Howell saw three birds at Santa Barbara, August 29, 1911, and on September 5, following, a flock of over a hundred was seen. J. H. Bowles noted the species in the same locality, November 25, 1911 (Condor, xiv, 1912, 10). H. S. Swarth saw a flock of six or eight birds, one of which he secured, at Ballona, Los Angeles County, May 18, 1900. He also saw two birds in the same locality, May 22, following. C. B. Linton saw one bird in full summer plumage on San Nicolas Island, June 1, 1910. Mr. Linton has also observed the species during the winter months, as follows: Five birds taken from small flock at Coronado Beach, San Diego County, November 6, 1906; several seen at Santa Cruz Island, December 8, 1907, and noted fairly common at Alamitos Bay, Los Angeles County, January 9-11, 1907.

133. (273) *Oxyechus vociferus* (Linnaeus). KILLDEER.

Common resident of the lowlands. Occurs in summer up to about 7000 feet around mountain lakes. Breeds ordinarily from the latter part of March until late May. Antonin Jay took a set of four slightly incubated eggs near El Monte, Los Angeles County, April 1, 1906, and another set of four, incubation commenced, at Nigger Slough, June 24, 1900. In June, 1907, I found the birds common at Bear and Baldwin lakes, 6750 feet altitude in the San Bernardino Mountains.

134. (274) *Ægialitis semipalmata* (Bonaparte). SEMIPALMATED PLOVER.

Common migrant along the coast, occasional in summer. Most abundant in the fall from September 15 to October 10, and in the spring from April 10 to May 15. J. H. Bowles has noted the species at Santa Barbara in the fall from July 12 (1910) to November 1 (1911), and in the spring from April 18 (1910) to May 16 (1910) (Condor xiv, 1912, 11). It was noted by C. B. Linton at San Nicolas Island, April 18 and May 6, 1910, and by E. A. Mearns and A. W. Anthony on San Clemente Island in late August, 1894 (Bull. U. S. Nat. Mus. 56, 1907, 141). I saw five birds of this species, one of which I secured, at Alamitos Bay, Los Angeles County, June 29, 1907.

135. (278) *Ægialitis nivosa* Cassin. SNOWY PLOVER.

Common resident along the coast. Breeds on sandy beaches of the mainland and on several of the Santa Barbara Islands. Eggs are generally deposited between May 1 and June 15. W. L. Chambers took three eggs, advanced in incubation, at Ballona, Los Angeles County, April 15, 1907, and found a nest containing one fresh egg, in the same locality, August 2, 1903. I found the species fairly common on San Nicolas Island in June, 1911, and O. W. Howard noted it on San Miguel Island in summer.

136. (280) *Ochthodromus wilsonius* (Ord). WILSON PLOVER.

One record. A male was taken by A. M. Ingersoll at Pacific Beach, San Diego County, June 29, 1894 (Nidologist II, 1895, 87). This specimen is now in the collection of J. Grinnell.

137. (281) **Podasocys montanus** (J. K. Townsend). MOUNTAIN PLOVER.

Common winter visitant on grassy fields and pasture lands of the lower country. I have never seen any exact data on the time of arrival and departure of this bird in southern California. Antonin Jay found it plentiful near Montebello, Los Angeles County, September 15, 1896, and noted it in considerable numbers at Nigger Slough, February 15, 1897. It was reported by G. F. Breninger as wintering on San Clemente Island (Auk **xxi**, 1904, 222). Being found in large flocks, it is easy prey for the pot hunter and, unless rigidly protected by law, is in danger of extermination.

138. (282) **Aphriza virgata** (Gmelin). SURF-BIRD.

Rare migrant, mostly along rocky shores. J. G. Cooper saw birds that he believed to be of this species on Santa Barbara Island, but they were so wild that he could not get a shot at them (B., Br. & Ridg., W. B. N. A. **i**, 1884, 127). I am informed by L. M. Loomis that there were in the collection of the California Academy of Sciences several specimens of the Surf-bird obtained by R. H. Beck on San Miguel Island, some time between March 13 and April 1, 1903. These specimens were destroyed with the rest of the Academy collection, in the conflagration of 1906. C. B. Linton took an adult bird on San Nicolas Island, May 15, 1909. A. B. Howell and W. L. Dawson saw a flock of five of these birds, accompanied by two Marbled Godwits, near Santa Barbara, September 16, 1911 (Condor **xiv**, 1912, 11). A pair was taken by Mr. Howell and Mr. Dawson secured one specimen. F. Gruber procured a specimen at Santa Barbara in the spring (Henshaw, Ann. Rep. Ch. En. U. S. G. S., 1876, App. JJ, 270). H. W. Marsden took an immature male at Pacific Beach, San Diego County, September 8, 1904 (Bishop, Condor **vii**, 1905, 141).

139. (283) **Arenaria interpres interpres** (Linnaeus). TURNSTONE.

One record, that of an immature female taken by H. W. Marsden at Pacific Beach, San Diego County, September 8, 1904 (Bishop, Condor **vii**, 1905, 141). This specimen was examined by H. C. Oberholser, who agrees with Dr. Bishop as to its identity. He considers that it is undoubtedly an Eastern Hemisphere bird that wandered out of its course.

140. (283a) **Arenaria interpres morinella** (Linnaeus). RUDDY TURNSTONE.

Fairly common migrant along the coast and on the Santa Barbara Islands. A specimen was taken at Santa Barbara by C. P. Streater in the fall of 1885 (Orn. & Ool. **xi**, 1886, 89), and A. B. Howell took several specimens in the same locality in late August and early September, 1911 (Condor **xiv**, 1912, 11). His first specimen was secured August 28. H. Robertson took an immature bird at Long Beach, Los Angeles County, August 24, 1897 (Bull. Cooper Orn. Club **i**, 1899, 94), and I took a female at Sunset Beach, Orange County, September 20, 1901 (Condor **x**, 1908, 50).

C. B. Linton found the species fairly common on the rocky shores of San Nicolas Island from March 30 to May 11, 1910. Nineteen specimens taken by

him at this time are in the collection of J. E. Thayer. Mr. Linton also saw two birds at San Miguel Island, October 15, 1910. H. Wright took an immature male on Catalina Island, September 3, 1907 (Grinnell, Condor XI, 1909, 139), and E. A. Mearns and A. W. Anthony took specimens on San Clemente Island in late August, 1894 (Bull. 56, U. S. Nat. Mus., 1907, 141).

141. (284) ***Arenaria melanocephala*** (Vigors). BLACK TURNSTONE.

Common in small flocks, mostly along rocky shores, from August to May. Particularly plentiful on the Santa Barbara Islands. The majority arrive in August and leave in April. Non-breeding birds are frequent in summer. C. B. Linton has found the species common on the channel islands as late as June 1, and saw several on San Nicolas and Santa Barbara islands July 4, 5, 1909. I saw a pair on Santa Barbara Island, June 14, 1911, and took a male on San Miguel Island, June 21, 1910. I also saw three birds at Bolsa Chica, Orange County, July 24, 1911, and took a female at Hyperion, Los Angeles County, July 28, 1910.

142. (286.1) ***Haematopus frazari*** Brewster. FRAZAR OYSTER-CATCHER.

Breeds on the coast of Mexico and Lower California. Straggles rarely north to Ventura County. J. G. Cooper obtained two specimens of this bird, one at San Diego and the other at Santa Barbara Island, in the months of May and June (Proc. Cal. Acad. Sci. iv, 1868, 8). B. W. Evermann noted it on the coast of Ventura County in summer (Auk III, 1886, 92), and P. I. Osburn saw a bird at Catalina Island, February 12, 1910 (Condor XIII, 1911, 76).

143. (287) ***Haematopus bachmani*** Audubon. BLACK OYSTER-CATCHER.

Resident on the Santa Barbara Islands. Breeds on Santa Barbara, Anacapa, Santa Cruz, Santa Rosa and San Miguel. Most plentiful on the last named. Fresh eggs may be found from May 15 to the latter part of June. I have a juvenile bird taken on San Miguel Island, June 23, 1910, and sets of eggs were taken at the same island in 1910 as follows: Two eggs, incubation one-third, taken by V. W. Owen, June 9; two eggs, fresh, taken by O. W. Howard, June 10; three eggs, fresh, taken by G. Willett, June 17, and two fresh and three slightly incubated eggs taken by J. S. Appleton, June 18 (Condor XII, 1910, 173). Two nests containing eggs were found by H. W. Henshaw on Santa Cruz Island early in June (Ann. Rep. Ch. En. U. S. G. S. 1876, App. JJ, 270), and J. G. Cooper took a set of four fresh eggs on Santa Barbara Island, June 3, 1863 (B., Br. & Ridg., W. B. N. A. I, 1884, 117). H. C. Burt found a nest containing one fresh egg on Anacapa Island, May 15, 1911. The egg was left and the nest was visited by H. B. Webster on May 29. It still contained but the one egg which was heavily incubated.

144. (292a) ***Oreortyx picta plumifera*** (Gould). PLUMED QUAIL.

Common resident from the Upper Sonoran zone of the foothills up through the Transition zone in the higher mountains. "In times of heavy snow on the mountains these birds appear in considerable numbers in the lower foothills and individuals have been seen in Pasadena, three miles from the base of the mountains" (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 19). H. Robertson

saw a bird in Garvanza, Los Angeles City, April 23, 1900, and on another occasion saw one in a small park in the central part of the city. Eggs are usually deposited in May, but J. Grinnell has taken young, apparently but a day or two old, on Pine Flats in the San Gabriel Range as late as July 15. H. J. Lelande found a nest in the Linda Vista Hills, west of Pasadena, May 7, 1897. It contained ten eggs of the "mountain quail" and four eggs of the valley quail, all of which were fresh (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 19). W. M. Pierce took ten fresh eggs in San Antonio Cañon, May 11, 1907.

Although the A. O. U. *Check-List* assigns the bird occurring from the San Gabriel and San Bernardino Mountains, south, to the form *Oreortyx picta confinis* Anthony, J. Grinnell and H. S. Swarth inform me that, after studying over the case, they are convinced that all southern California birds are referable to *O. p. plumifera* and that *O. p. confinis* has no standing as a bird of California.

145. (294a) **Lophortyx californica vallicola** (Ridgway). VALLEY QUAIL.

Common resident of the lowland and foothill country, except the marsh lands, but not so generally abundant as formerly. This is the principal game bird of southern California and its numbers have been considerably reduced by hunters. If not hunted too persistently it takes kindly to civilization, nesting commonly in grain fields and near farm houses and even breeding in parks and gardens in the cities. It is common on Catalina Island and is occasionally seen on San Clemente. Is said to have been introduced on the latter island. J. Grinnell says that six specimens taken by him on San Clemente in May, 1897, are slightly lighter than birds from Pasadena (Pub. 1, Pasadena Acad. Sci., 1897, 12). Eggs are generally deposited in April and May. Extreme nesting dates are: Thirteen fresh eggs taken by W. M. Pierce near Claremont, Los Angeles County, April 4, 1901, and eleven eggs noted by H. Robertson near Los Angeles, August 9, 1895.

146. (295) **Lophortyx gambeli** Gambel. GAMBEL QUAIL.

Occasional straggler from the desert. H. S. Swarth took an adult male near Los Angeles, September 16, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 19). On several occasions during the past twenty-five years, captive birds of this species are known to have been released in the vicinity of Los Angeles. In at least one instance they are known to have bred after their release. It is possible that the specimen taken by Mr. Swarth was one of these released birds or their stock. A male of this species was sent to E. Wall by J. S. Bright, who killed it near San Bernardino, January 15, 1893 (Auk x, 1893, 204). Where the ranges of *L. gambeli* and *L. c. vallicola* come together, hybrids occur (Henshaw, Auk II, 1885, 247).

147. (297c) **Dendragapus obscurus sierrae** Chapman. SIERRA GROUSE.

Sierra Nevada Mountains, south to Mt. Piños, Ventura County. E. W. Nelson saw a few of these birds around the summit of Mt. Piños, in October, 1891 (Fisher, N. A. Fauna No. 7, 1893, 31). In July, 1904, J. Grinnell saw two birds and found numerous signs of others, on the north side of Mt. Piños among the firs. The two birds seen were an old female and a half-grown

young one (Auk xxii, 1905, 382). L. Peyton saw several birds on Sawmill Mountain, the westward spur of Mt. Piños, in early September, 1911.

148. (312) **Columba fasciata fasciata** Say. BAND-TAILED PIGEON.

Breeds in the mountains, mostly above 3000 feet. Irregular fall, winter and spring visitant to the foothills and occasionally well down into the valleys. Some seasons appears in the lower country in large flocks, and other seasons is not noted at all. Two birds were seen by R. Rogers at Santa Barbara, September 18, 1906 (Condor ix, 1906, 28). W. L. Chambers secured several specimens which were poisoned by a rancher near Santa Monica, Los Angeles County, February 26, 1901. Mr. Chambers states that there were hundreds of the birds around Santa Monica at the time, feeding on the grain fields. H. S. Swarth has noted the species on stubble fields near Los Angeles in winter, and on March 3, he saw several in the oak trees along the Los Angeles River. Flocks were seen by L. Belding at El Cajon, San Diego County, December 15, 1883 (Land Birds Pac. Dist., 1890, 20).

J. Grinnell found Band-tailed Pigeons common around the summit of Mt. Piños in the summer of 1904 (Auk xxii, 1905, 382), and in June, 1906, I found them fairly plentiful in the San Bernardino Mountains above 5000 feet. C. E. Groesbeck found a nest containing one young bird about a week old, on Mt. Wilson, Los Angeles County, July 5, 1894, and W. B. Judson found a nest containing one considerably incubated egg, in the same locality, May 23, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 20). Two nests, each containing one young bird, were found by M. F. Gilman at an elevation of about 6500 feet on San Jacinto Mountain, May 14, 1897 (Condor v, 1903, 134). J. B. Dixon and C. S. Sharp found the species breeding about twenty miles from Escondido, San Diego County, at an elevation of 3250 feet. Sets of eggs were taken as follows: Two eggs, fresh, May 3, 1901; one egg, incubation advanced, May 11, 1902, and one egg, incubation advanced, June 24, 1902 (Condor v, 1903, 16).

149. (316) **Zenaidura macroura carolinensis** (Linnaeus). MOURNING DOVE.

Abundant resident throughout the lower country and on the larger islands of the Santa Barbara group. Occurs in summer up to the summits of the mountains. The breeding season is protracted and eggs may be found from February until September. H. J. Lelande took two slightly incubated eggs near San Gabriel, Los Angeles County, February 9, 1897, and Antonin Jay found two fresh eggs near Santa Monica, September 22, 1894. A. B. Howell found a nest in an orange tree near Covina, Los Angeles County, which contained two heavily incubated eggs, December 5, 1911 (Condor xiv, 1912, 73).

150. (320a) **Chaemepelia passerina pallescens** Baird. MEXICAN GROUND DOVE.

Rare straggler from across the mountains. Several specimens said to have been obtained by Mr. Lorquin at San Gabriel, Los Angeles County, in the 60's (B., Br. & Ridg., N. A. L. B. III, 1874, 522). They have never been noted in that locality since that time and the record may be erroneous. A bird of this

species was taken by M. F. Gilman at Banning, Riverside County, in October, 1902. A. M. Ingersoll has a specimen that was shot by F. Judson at San Pasqual, San Diego County, about 1900.

151. (324) **Gymnogyps californianus** (Shaw). CALIFORNIA VULTURE.

Tolerably common resident in the mountainous sections of the country, occasionally straggling down into the lowlands in search of food. This great bird, although not nearly so abundant as formerly, is regularly reported from various of the more rugged regions of southern California. The center of its abundance at the present time appears to be the mountains of Santa Barbara and Ventura counties. The average nesting time seems to be in March and the first part of April. O. W. Howard took an egg in Sisquoc Cañon, Santa Barbara County, April 25, 1895 (Shields, *Nidologist* II, 1895, 148). A fresh egg was taken by F. Ruiz in San Roque Cañon, near Santa Barbara, April 17, 1899 (Redington, *Bull. Cooper Orn. Club* I, 1899, 75), and another egg was taken for W. F. Webb in the same locality, April 29, 1897 (Museum IV, 1898, 103). In November, 1905, an egg was found in Sespe Valley, back of Nordhoff, Ventura County. The egg was uninjured, but the contents were dried up (Gallagher, *Condor* VIII, 1906, 57). A fresh egg was found by a little girl in the Santa Monica Mountains, Los Angeles County, April 11, 1900, and is now in the collection of J. E. Law. A nest containing an egg was found by W. L. Finley and H. T. Bohlman in the mountains near Pasadena, March 10, 1906. The egg was allowed to hatch and a most interesting series of photographs was taken of the young and old birds. The young bird was taken from the nest on July 6 and was sent to the New York Zoological Park (*Condor* VIII, 1906, 135). A fresh egg was taken by W. V. Dyche in the Cuyamaca Mountains, San Diego County, in March, 1900 (Gidney, *Condor* II, 1900, 124).

152. (325) **Cathartes aura septentrionalis** Wied. TURKEY VULTURE.

Common resident from the mountains to the ocean. Breeds plentifully in the foothills and occasionally in the lower country. Eggs are generally deposited in early April in caves of the foothills or in blackberry thickets in the river bottoms. Antonin Jay took a set of two eggs, incubation commenced, near Whittier, Los Angeles County, March 15, 1903, and I took a set of two, two-thirds incubated, in the same locality, May 8, 1897.

153. (328) **Elanus leucurus** (Vieillot). WHITE-TAILED KITE.

Formerly a fairly common resident of the lowlands, where it bred in the willow timber. Now rare. Fifteen or twenty years ago this bird might be seen frequently in the lower country, but at the present time it is decidedly uncommon. I have not seen one since 1906. There are probably, however, a few pairs left in the more remote willow regions of southern California, but their extinction is only the matter of a short time. C. P. Streater took a set of five eggs near Santa Barbara, April 14, 1886 (*Orn. & Ool.* XI, 1886, 152). B. W. Evermann located four or five pairs of birds breeding in the Santa Clara Valley, Ventura County, in the early 80's (*Auk* III, 1886, 92). A. M. Shields took five fresh eggs near Alamitos, Los Angeles County, April 4, 1896,

and took another set, also of five fresh eggs, in the same locality, April 11, the same year (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 20). A. M. Ingersoll informs me that from 1887 to 1892 he saw White-tailed Kites frequently in the vicinity of San Diego and knew of two pairs nesting in that region. Of late years he finds them very scarce. He took two slightly incubated eggs near National City, March 24, 1890, and five, slightly incubated, in the same locality, April 25, following.

154. (331) **Circus hudsonius** (Linnaeus). MARSH HAWK.

Common resident of the lowlands, especially on the salt marshes near the coast. Breeds mostly in late March and early April. I took a set of eight eggs advanced in incubation, near Bay City, Orange County, April 7, 1910, and O. W. Howard took a set of five eggs, two-thirds incubated, at Alamitos Bay, Los Angeles County, April 21, 1906. H. C. Burt took an immature male of this species on Anacapa Island, March 15, 1911 (Condor XIII, 1911, 166).

155. (332) **Accipiter velox** (Wilson). SHARP-SHINNED HAWK.

Common in fall, winter and early spring in the lower country and on the Santa Barbara Islands. Breeds sparingly in the higher mountains. H. J. Lelande found a nest of this bird at Bear Valley, about 7000 feet altitude in the San Bernardino Mountains, June 8, 1904. It contained four young birds about two-thirds grown.

156. (333) **Accipiter cooperi** (Bonaparte). COOPER HAWK.

Fairly common resident from the lower foothills up to 7000 feet in the mountains. Breeds mostly in late April and early May. H. C. Burt informs me that this hawk breeds sparingly in the willow groves bordering the Santa Clara River, Ventura County. He took a set of three eggs in this locality April 17, 1906, and a set of four eggs, April 19, 1907. Antonin Jay took a set of four, slightly incubated eggs near Covina, Los Angeles County, April 22, 1906, and J. Grinnell took a set of four, advanced in incubation, near Seven Oaks, 5000 feet altitude in the San Bernardino Mountains, June 13, 1905 (Univ. Calif. Publ. Zool. v, 1908, 58). A. B. Howell and A. van Rossem saw a pair of these birds on Santa Cruz Island the latter part of April, 1911 (Condor XIII, 1911, 209).

157. (337b) **Buteo borealis calurus** Cassin. WESTERN RED-TAIL.

Common resident from the lowlands to at least 9000 feet in the mountains. Also on the larger Santa Barbara Islands. Breeds most plentifully in the foothill and mesa country, eggs being generally deposited in March. J. B. Dixon took two fresh eggs near Escondido, San Diego County, February 14, 1902 (Condor IV, 1902, 46), and H. A. Gaylord took two eggs advanced in incubation, in the San Fernando Valley, Los Angeles County, April 30, 1892 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 21).

158. (339b) **Buteo lineatus elegans** Cassin. RED-BELLIED HAWK.

Fairly common resident of the lowlands, especially the willow regions. Breeds mostly in late March and the month of April. As the country settles up this bird is becoming scarcer, and before many years will be found only in

the more remote parts of southern California. B. W. Evermann found the Red-bellied Hawk not uncommon in the vicinity of Santa Paula, Ventura County, where he found their nests in sycamores, cottonwoods, live oaks and willows, near the borders of streams (Bendire, Life Hist. N. A. B., 1892, 227). There are still a few pairs breeding in the willow groves of Los Angeles County, but they are becoming scarcer every year. F. Stephens took a set of three partially incubated eggs in San Timoteo Cañon fifteen miles east of Colton, April 7, 1882 (Bendire, Life Hist. N. A. B., 1892, 227). C. S. Sharp found two fresh eggs near Escondido, San Diego County, March 6, 1904, and noted a nest which contained two young, a few days old, in the same locality, July 4, 1906 (Condor VIII, 1906, 147).

159. (340) **Buteo abbreviatus** Cabanis. ZONE-TAILED HAWK.

Rare straggler to the extreme southern end of the state. Recorded as follows: Male taken by J. G. Cooper thirty miles north of San Diego, February 23, 1862 (Land Birds Cal., 1870, 480), now no. 4375 collection University of California Museum of Vertebrate Zoology. Immature male taken by C. B. Linton near National City, San Diego County, November 26, 1906 (Condor x, 1908, 181), now no 16490 collection J. E. Thayer. Unsexed specimen taken by W. J. McClosky thirty miles north of San Diego, September 10, 1907 (Grinnell, Condor XI, 1909, 69), now no 5494 collection University of California Museum of Vertebrate Zoology.

160. (342) **Buteo swainsoni** Bonaparte. SWAINSON HAWK.

Common in spring, summer and fall from the foothills to the ocean. Migrates south in September and October and returns in March and early April. According to L. Belding, winters occasionally in the vicinity of San Diego (Land Birds Pac. Dist., 1890, 36). F. S. Daggett found the species common on Catalina Island August 1 to 16, 1898, and took one specimen. Eggs are generally deposited during the latter part of April and first part of May. Antonin Jay took three fresh eggs in the San Fernando Valley, Los Angeles County, April 24, 1898, and W. L. Chambers took three fresh eggs near Santa Monica the first day of June (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 22).

161. (348) **Archibuteo ferrugineus**(Lichtenstein). FERRUGINOUS ROUGH-LEG.

Frequently seen. Most common in the fall. J. G. Cooper took two specimens near Saticoy, Ventura County, in winter and saw many more (Auk IV, 1887, 91). J. S. Appleton took a male in Simi Valley, Ventura County, February 17, 1912. H. S. Swarth has seen the birds occasionally in the San Fernando and Caluenga valleys, Los Angeles County, in fall and winter. He took a female at the summit of Caluenga Pass, October 4, 1897, and noted several birds near Los Angeles, October 16, following (Condor II, 1900, 16). In the University of California Museum of Vertebrate Zoology are three specimens of this bird taken in southern California, as follows: Female collected by J. G. Cooper at San Pedro, October 24, 1861; male, also collected by Dr.

Cooper, fifteen miles north of San Diego, March 5, 1862; and male, collector unknown, taken at San Bernardino, December 12, 1864. F. Paine took a male in the Volcan Mountains, San Diego County, February 25, 1884 (Emerson, Bull. Cal. Acad. Sci. 11, 1887, 421), and A. L. Heermann found the species abundant at some seasons in the mountains of San Diego County (Pac. R. R. Rep. x, 1859, 32).

162. (349) ***Aquila chrysaëtos*** (Linnaeus). GOLDEN EAGLE.

Rather common resident, mostly in mountainous regions. Breeds in February and early March. H. C. Burt took two fresh eggs near Santa Paula, Ventura County, March 18, 1910. W. L. Chambers took two slightly incubated eggs near Covina, Los Angeles County, March 5, 1910. I found a nest, containing two half-incubated eggs, near Highlands, San Bernardino County, April 4, 1897. A. M. Ingersoll has taken many sets of eggs of this bird in the vicinity of San Diego. He informs me that he believes fresh eggs found after March 10 are those of birds which have lost their first laying. His earliest and latest dates for the first laying are, respectively, set of two fresh eggs taken February 9, 1910, and set of two, one-third incubated, March 15, 1895. Mr. Ingersoll states that, upon being robbed, the birds will lay a second and even a third set. He has found third sets as late as May.

163. (352) ***Haliaeetus leucocephalus leucocephalus*** (Linnaeus). BALD EAGLE.

Common resident of the Santa Barbara Islands, occasional on the mainland coast. Breeds mostly in late February and early March. Recorded by H. W. Henshaw as abundant on the mainland of southern California in 1876 (Ann. Rep. Ch. Eng. U. S. Geol. Surv., 1876, App. JJ, 264), but now common only on the islands. Two considerably incubated eggs taken by W. L. Chambers near Santa Monica, Los Angeles County, March 13, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 22). Two fresh eggs taken by E. Davis near Laguna, Orange County, March 5, 1895, and two young birds about a month and a half old noted by Mr. Davis in the same locality, March 15, following (Nidologist iv, 1897, 78). In June, 1910, I noted many nests of this species, all of which contained nearly full-grown young, on Anacapa, Santa Cruz, Santa Rosa and San Miguel islands. In June, 1911, I saw a pair of birds on Santa Barbara Island, and in March, 1905, I took two sets of eggs on Catalina. C. B. Linton has taken eggs on San Nicolas and San Clemente.

164. (355) ***Falco mexicanus*** Schlegel. PRAIRIE FALCON.

Resident east of the mountains. Occurs on the Pacific slope in fall, winter and spring. Noted as follows: Adult male taken by J. Dixon at an altitude of 8000 feet on Mt Piños, Ventura County, July 4, 1904 (Grinnell, Auk xxii, 1905, 383). Immature female taken by H. S. Swarth in the San Fernando Valley, Los Angeles County, December 13, 1901, and adult male taken by Mr. Swarth in the same locality, January 20, 1902. Bird seen by F. S. Daggett in the San Fernando Valley, November 1, 1902, and another in the Arroyo Seco, near Pasadena, September 28, 1901. Specimen taken by J. Grinnell in Eaton

Cañon, near Pasadena, November 27, 1896, and female taken by W. B. Judson at Cerritos, Los Angeles County, March 27, 1897. Noted once or twice by J. G. Cooper in the Cuyamaca Mountains, San Diego County, during the spring of 1862 (Am. Nat. VIII, 1874, 16), and recorded by L. Belding as rare in winter in San Diego County (Land Bds. Pac. Dist., 1890, 42).

165. (356a) **Falco peregrinus anatum** Bonaparte. DUCK HAWK.

Common resident on the Santa Barbara Islands. Less plentiful on the mainland. Breeds mostly in March. O. W. Howard took a set of three slightly incubated eggs on Santa Cruz Island, April 5, 1906, and I took a set of four eggs, about one-fourth incubated, on Catalina Island, April 8, 1904. J. Dixon took three eggs, advanced in incubation, at San Onofre, San Diego County, March 28, 1906 (Condor VIII, 1906, 94). A. M. Ingersoll took four slightly incubated eggs near San Diego, March 12, 1897.

166. (357) **Falco columbarius columbarius** Linnaeus. PIGEON HAWK.

Common in the foothill and mesa regions in fall, winter and spring.

167. (357a) **Falco columbarius suckleyi** Ridgway. BLACK PIGEON HAWK.

One record. J. F. Illingworth took a male at Claremont, Los Angeles County, December 6, 1895. This specimen is now in the collection of J. Grinnell.

168. (357b) **Falco columbarius richardsoni** Ridgway. RICHARDSON PIGEON HAWK.

Two records. F. S. Daggett took a bird of the year in fresh fall plumage, in the San Fernando Valley, Los Angeles County, October 31, 1903 (Condor VII, 1905, 82), now no. 5856 collection F. S. Daggett. H. W. Marsden took an immature female at Witch Creek, San Diego County, February 9, 1904 (Bishop, Condor VII, 1905, 142), now no. 10157 collection L. B. Bishop.

169. (360a) **Falco sparverius phalaena** (Lesson). DESERT SPARROW HAWK.

Very common resident. Breeds mostly in April and May. J. Grinnell took five slightly incubated eggs near Pasadena, March 18, 1893, and E. Parker took five half incubated eggs near Claremont, June 27, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 23). On April 16, 1910, H. C. Burt took several sets of eggs of this species from deserted nests of the Yellow-billed Magpie in Alisio Cañon, Ventura County.

170. (364) **Pandion haliaëtus carolinensis** (Gmelin). OSPREY.

Common in spring, summer and fall on several islands of the Santa Barbara group. Occasional on the mainland coast. A few winter as far north as San Diego (Belding, Land Birds Pac. Dist., 1890, 46). J. G. Cooper found the fish hawk common along the coast of Ventura County in the early 70's (Auk IV, 1887, 91). Since that time they have been almost exterminated along the mainland coast. Many have been shot by gunners and most of those remaining have taken refuge on the islands. E. Davis saw a pair at a nest near Laguna Beach, Orange County, March 5, 1895. The Osprey breeds plentifully on San Clemente and

San Nicolas islands and occasionally on Catalina. It has been noted only occasionally on the more northern islands of the group and, so far as I know, has not been found breeding there. Eggs are generally deposited in March. I have a set of three eggs taken by C. B. Linton on San Clemente Island, March 13, 1907, and I saw a pair of birds re-lining a nest on Catalina Island, April 11, 1904. The nest, at this time, was about ready to receive eggs and they were probably deposited a very few days later.

171. (365) **Aluco pratincola** (Bonaparte). BARN OWL.

Common resident from the coast to the base of the mountains. Occasional on some of the Santa Barbara Islands. Breeds mainly in March and April. In southern California, nests found in hollow trees are exceptional, the most of these birds nesting in cavities in dirt banks. C. E. Groesbeck noted half-grown young near Pasadena as early as February 11, 1897, and H. J. Lelande took five fresh eggs in the same locality, June 5, the same year (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 23). I have taken the Barn Owl on Santa Cruz Island, and H. C. Burt took a specimen on Anacapa.

172. (366) **Asio wilsonianus** (Lesson). LONG-EARED OWL.

Fairly common resident of the oak regions of the foothills and the willow thickets of the lower country. Occasional up to 7000 feet in the mountains and on the Santa Barbara Islands. Much less plentiful than formerly. I took an adult female at an altitude of about 7000 feet in the San Bernardino Mountains, June 15, 1907 (Condor XII, 1910, 44). C. B. Linton saw three birds, one of which he collected, on San Clemente Island in December, 1908 (Condor XI, 1909, 194). O. W. Howard found six nearly half-grown young of this species in an old Raven's nest on Catalina Island, in April, 1909. Both parent birds were present. B. W. Evermann found this owl an abundant resident of live oak and willow groves near Santa Paula, Ventura County. He took eggs as early as February 13 (Auk III, 1886, 93). Lawrence and Sidney Peyton and H. C. Burt have found it breeding commonly along the Santa Clara River, Ventura County; E. Rowe found it breeding plentifully near Redlands, San Bernardino County, in 1894-95, and J. G. Cooper recorded it as breeding commonly near San Diego in the early 60's (Land Birds Cal., 1870, 426). J. M. Hatch took a set of eggs near Escondido, San Diego County, February 14, 1896 (Sharp, Condor IX, 1907, 87), and R. Arnold took four fresh eggs in the San Fernando Valley, Los Angeles County, May 1, 1892 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 23).

173. (367) **Asio flammeus** (Pontoppidan). SHORT-EARED OWL.

Common winter visitant to wet meadow lands and fresh water marshes, appearing early in October and remaining fairly common until early March. This bird has been reported as breeding in southern California and, while I have seen no records that I am willing to accept as authentic, I would not be surprised to find that it does occasionally breed in this locality. It is known to nest in central California and there have been so many reports of its nesting farther south, that I believe there may be truth in some of them. J. Grinnell

saw a specimen that was shot on Catalina Island in December, 1897 (Auk xv, 1898, 234).

174. (369) ***Strix occidentalis occidentalis*** (Xantus). SPOTTED OWL.

Resident in small numbers in the foothill and mountain regions up to at least 5000 feet. Owing to its retiring habits, very inconspicuous, but occasionally noted in many different sections of southern California. Specimens taken as follows: Adult female and immature female (collection G. Willett), by A. N. Stone near Fillmore, Ventura County, December 13, 1910. Adult female by L. H. Miller in Fish Cañon, northern Los Angeles County, April 10, 1911. Male and female by H. J. Lelande and O. W. Howard near Newhall, Los Angeles County, May 20, 1906. Female by E. F. Lane in Little Tujunga Canon, Los Angeles County, in June, 1888 (Thurber, Auk xiii, 1896, 265). Adult male by J. Grinnell near Pasadena, August 10, 1894 (Pub. 2, Pasadena Acad. Sci., 1898, 23). Two immature birds by H. Robertson in Millard's Cañon, near Pasadena, in June, 1902. Two males by J. Pringle in the Arroyo Seco, October 22, 1900, and female by W. Bebb on the Mt. Wilson trail, March 21, 1905 (Richardson, Condor viii, 1906, 57). Female by F. S. Daggett in San Dimas Cañon, February 15, 1903. Fully fledged young by F. J. Illingworth in a cañon near Claremont, July 4, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 23). One specimen by R. B. Herron midway between San Diego and Riverside, fall of 1885 (Bendire, Life Hist. N. Am. Bds., 1892, 343), and pair by Mr. Herron near Banning, Riverside County, in September, 1895 (Thurber, Auk xiii, 1896, 265). Male, female and juvenile by F. Stephens at an elevation of 5000 feet on Smith Mountain, San Diego County, June 20, 1892 (Auk ix, 1892, 392).

Several sets of eggs recorded from southern California, some of them very questionable. The following records are undoubtedly authentic. Two considerably incubated eggs taken by L. Peyton from a cavity in a granite cliff in Fish Cañon, northeastern Los Angeles County, April 1, 1909. Three eggs, with both parent birds, taken by Mr. Peyton from the same nest, March 30, 1910 (Condor xii, 1910, 122). Two slightly incubated eggs taken by A. M. Ingersoll from a nest on a ledge of a cliff, near Oceanside, San Diego County, March 24, 1894. Mr. Ingersoll was able to approach very near to the incubating bird and is positive as to its identity.

175. (372) ***Cryptoglaux acadica acadica*** (Gmelin). SAW-WHET OWL.

One record. F. Stephens took an adult male at Round Valley, 9200 feet elevation on San Jacinto Mountain, August 11, 1898 (Condor iv, 1902, 40). Now no. 3103 collection F. Stephens.

176. (373c) ***Otus asio bendirei*** (Brewster). CALIFORNIA SCREECH OWL.

Fairly common resident of timbered regions from the lowlands up to at least 5000 feet in the mountains. Breeds mostly in April. C. E. Groesbeck found an incomplete set of two fresh eggs near Pasadena, March 14, 1896, and J. Grinnell found a set of three eggs, incubation advanced, in the same locality. June 5, 1895 (Pub. 2, Pasadena Acad. Sci., 1898, 24).

177. (374) *Otus flammeolus flammeolus* (Kaup). FLAMMULATED SCREECH OWL.

Although the last A. O. U. *Check-List* refers our California bird to the form *Otus flammeolus idahoensis* (Merriam), I am inclined to believe that this conclusion was reached without the examination of a sufficient amount of material to justify a final decision. In fact, it seems impossible, at the present time, to get together a large enough series of specimens to enable us to arrive at a definite conclusion as to the range and exact differences of these two subspecies. The natural assumption from a geographical standpoint would be that our bird is referable to *O. f. flammeolus*. It may even be possible that future study of the species will show that *idahoensis* is not entitled to sub-specific rank.

Four specimens of the Flammulated Screech Owl are recorded from southern California, where they seem to be confined to the higher mountains, probably not occurring south of the San Bernardino Range. Two of these specimens were originally recorded as *O. f. flammeolus* and are as follows: Male taken by F. Ball near San Bernardino, January 18, 1885 (Stephens, Condor iv, 1902, 40), now in collection of Wm. Brewster. Male taken by E. D. Palmer at an elevation of 5000 feet in the San Bernardino Mountains, May 26, 1893 (Auk xi, 1894, 78). Mr. Palmer informs me that this specimen was destroyed by fire some years ago. Robert Ridgway, after examining Mr. Brewster's specimen, wrote him as follows: "I have compared your specimen with the few specimens in our collection. The material available is very meager—less than a dozen adult birds altogether—and not nearly sufficient to give any clear idea of the normal individual variation irrespective of locality. Your specimen resembles the type of *idahoensis* very much more closely than it does any other specimen in the lot; in fact, it scarcely differs at all except in the slightly coarser markings of the under parts. On geographical grounds, however, your specimen certainly should not be *idahoensis*—if there really is such a subspecies—as it is hardly probable (though of course possible) for this form to exist in southern California. Really, however, I must confess that I can not make anything out of the matter one way or another from the scant material available, and we will have to wait until a much larger number of specimens can be brought together, and especially a series from some one locality, before we shall be able to understand the species well."

The two following specimens were originally recorded as *O. f. idahoensis*. Adult female taken by M. F. Gilman with a set of two slightly incubated eggs, at an elevation of about 7500 feet, on the side of San Gorgonio Peak, June 3, 1894. The bird was sent to C. Hart Merriam, who pronounced it *O. f. idahoensis* (Condor iv, 1902, 85). These eggs are still in the collection of Mr. Gilman, but the bird was destroyed. Adult male taken by J. Grinnell at Bluff Lake, about 7500 feet altitude in the San Bernardino Mountains, July 15, 1905 (Univ. Calif. Publ. Zool. v, 1908, 59). This specimen (no. 6730 collection J. Grinnell) was pronounced by H. C. Oberholser to be nearest to, but not quite, *idahoensis*. Mr. Grinnell writes me further regarding this bird: "It is practically identical with others from Arizona, the latter being considered *flam-*

*meolus*. It would seem, therefore, that *idahoensis* has little claim to inclusion in our California list."

178. (375d) **Bubo virginianus pacificus** Cassin. PACIFIC HORNED OWL.

Fairly common resident from the foothill and mesa region up to over 7000 feet in the mountains, but becoming scarcer every year. As the country settles up, this bird is retreating to more sparsely settled sections and, in many localities where it was formerly common, it is now rare or entirely absent. It breeds mostly during the latter part of February and the first part of March. J. B. Dixon took a set of two eggs near Escondido, San Diego County, February 2, 1902, (Condor IV, 1902, 46), and I took two eggs, advanced in incubation, near Whittier, Los Angeles County, May 2, 1896. O. W. Howard saw a Horned Owl on Santa Cruz Island, April 29, 1906.

179. (378) **Speotyto cunicularia hypogaea** (Bonaparte). BURROWING OWL.

Common resident from the coast to the base of the mountains. Also found on the larger islands of the Santa Barbara group. Breeds mostly in late April and the month of May. I took ten fresh eggs near Highlands, San Bernardino County, April 3, 1897, and Antonin Jay took nine eggs, advanced in incubation, near Nigger Slough, Los Angeles County, June 8, 1902.

180. (379) **Glaucidium gnoma gnoma** Wagler. PYGMY OWL.

Rather rare resident of the mountains and higher foothills. According to J. Grinnell, a number of specimens have been taken in winter in the mountains north of Pasadena (Pub. 2, Pasadena Acad. Sci., 1898, 24). F. S. Daggett has a female, shot at Fredalba Park, 5500 feet altitude in the San Bernardino Mountains, June 26, 1899. O. W. Howard found a nest of the Pygmy Owl near Carpinteria, Santa Barbara County, in the summer of 1895. It was in a hollow in a sycamore tree, six feet from the ground, and contained newly hatched young (Taylor, Nidologist II, 1895, 153). According to F. S. Daggett, a pair nested for at least three seasons prior to 1896, in a deserted woodpecker's hole in a sycamore stub near Switzer's Camp in the Arroyo Seco, Los Angeles County; and in the latter part of July, 1888, Antonin Jay found a nest containing four nearly full-grown young in the same locality. H. J. Lelande found a nest in the west fork of the San Gabriel Cañon, Los Angeles County, June 5, 1900. It contained four young about two weeks old (Condor IV, 1902, 21). H. S. Swarth and W. B. Judson took an adult female and three juveniles from a nest in a dead pine tree at Bear Valley, 6750 feet altitude in the San Bernardino mountains, June 28, 1894 (Condor XII, 1910, 109). C. S. Sharp records the fact that a pair of Pygmy Owls were found nesting near Escondido, San Diego County, by the late J. M. Hatch, in 1895 and 1896. The first year the nest contained heavily incubated eggs, which were not disturbed. The next year young birds were found (Condor IX, 1907, 87).

181. (385) **Geococcyx californianus** (Lesson). ROAD-RUNNER.

Common resident of the brush and cactus covered washes and mesas. Twenty years ago the Road-runner was abundant all through the Lower So-

noran zone of California. It was noted by J. G. Cooper on Catalina Island in the 60's (Proc. Cal. Acad. Sci. iv, 1869, 77). There seems to be something in the appearance of this bird that causes the hunter and farmer boy to shoot it on sight. This wanton persecution has greatly diminished the numbers of this species, one of the most interesting of our California birds. The nesting season is, ordinarily, from late March to early May. W. M. Pierce found a nest containing three fresh eggs near Claremont, Los Angeles County, March 10, 1901, and noted another nest in the same locality that contained three fresh eggs July 16, 1904.

182. (387a) **Coccyzus americanus occidentalis** Ridgway. · CALIFORNIA CUCKOO.

Fairly common resident of the willow regions of the lowlands. Its secretive habits render it easily overlooked. It probably arrives in southern California in April and early May and leaves mostly in September, but I have not found a great deal of definite information as to the time of migrations. Antonin Jay noted a bird near Los Angeles, May 5, 1907, and saw another in the same locality, September 22, 1904 (Condor XIII, 1911, 69). The Cuckoo begins nesting in the willow groves the first part of June, and fresh eggs may be found until late in July. H. C. Burt found a nest containing two eggs, near Santa Paula, Ventura County, in June, 1904. I took a slightly incubated set of three eggs near Compton, Los Angeles County, July 13, 1907, and on July 24, 1910, I found a nest in the same locality that contained one fresh egg, one badly incubated egg, one addled egg and one young bird (Condor XIII, 1911, 69). Alphonse and Antonin Jay have taken many sets of Cuckoo's eggs in the willow groves of Los Angeles County. Their earliest nesting date is of three newly hatched young found May 10, 1901 (Condor XIII, 1911, 69), and their latest date is of a set of two badly incubated eggs found August 20, 1911.

J. J. Schneider found the Cuckoo breeding rather commonly near Anaheim, Orange County, in June and July, 1899. His latest set was four slightly incubated eggs taken July 19 (Condor II, 1900, 34). F. Stephens found a nest in the San Bernardino Valley in the latter part of May, 1882. The eggs were two in number, fresh, and were spilled from the nest and broken while Mr. Stephens was climbing the tree (Bendire, Life Hist. N. A. Bds., 1895, 25). The species was noted once in 1875 and once in 1876 by F. E. Blaisdell at Poway, San Diego County (Belding, Land Bds. Pac. Dist., 1890, 57), and J. M. Hatch took a male on August 20 and saw another bird on August 22, 1896, near Escondido (Auk XIII, 1896, 347).

183. (390) **Ceryle alcyon** (Linnaeus). BELTED KINGFISHER.

Occurs in considerable numbers during migrations, and is occasionally noted at all seasons of the year. I have seen it in summer in various parts of Los Angeles County, as well as on the Santa Barbara Islands, but have never found a nest in this locality. H. C. Burt informs me that in the summer of 1904, a pair of these birds nested in a river bank near Santa Paula, Ventura County. C. B. Linton saw a pair enter a hole in a bank near Whittier, Los Angeles County, in the summer of 1895. L. Belding records the Belted

Kingfisher as a resident near San Diego, though not numerous (Land Bds. Pac. Dist., 1890, 58).

184. (393d) **Dryobates villosus hyloscopus** Cabanis & Heine. CABANIS WOODPECKER.

Common resident of the mountains up to at least 10,000 feet. Less common, locally, in the lower country. Quite numerous in the oak regions during severe winters. Breeds mostly in April and early May. S. Peyton took four slightly incubated eggs near Sespe, Ventura County, April 12, 1907. Antonin Jay took four fresh eggs near El Monte, Los Angeles County, March 25, 1900, and G. F. Morcom took three slightly incubated eggs near Compton, May 2, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 25). In June, 1907, I found several nests of this species in the San Bernardino Mountains from 6000 to 8000 feet altitude. They contained young of various ages.

185. (394e) **Dryobates pubescens turati** (Malherbe). WILLOW WOODPECKER.

Common resident in the willow regions of the lower country. Breeds in April and May. I took a set of seven eggs, about two-thirds incubated, near Los Angeles, April 23, 1906, and J. E. Law took five fresh eggs near Pomona, May 18, 1902.

186. (397) **Dryobates nuttalli** (Gambel). NUTTALL WOODPECKER.

This woodpecker, originally described from specimens taken near Los Angeles (Proc. Acad. Nat. Sci. Phila. 1, 1843, 259), is a common resident of the mesas and foothills, and up to at least 5000 feet in the mountain cañons. It breeds mostly in April and early May. I took five fresh eggs near Monrovia, Los Angeles County, May 6, 1905. B. T. Gault took six eggs, advanced in incubation, near Redlands, San Bernardino County, April 24, 1883 (Bull. Ridg. Orn. Club 2, 1887, 79). J. G. Cooper took a set of five eggs near San Diego, April 20, 1862 (Land Birds Cal., 1870, 379).

187. (399) **Xenopicus albolarvatus** (Cassin). WHITE-HEADED WOODPECKER.

Common resident of the Transition zone in the mountains, from 5000 to 8000 feet altitude. South to San Diego County. Occasional to lower levels in winter. Breeds mostly in May. J. Grinnell found this woodpecker moderately common on Mt. Piños, Ventura County, in the summer of 1904 (Auk XXII, 1905, 383). During June, 1907, I found it very plentiful at Bear Valley in the San Bernardino Mountains, and examined several nests, all of which contained young birds. F. Stephens found it breeding in the Cuyamaca Mountains, San Diego County, from 5800 to 7000 feet altitude. On June 19, 1893, he noted a nest containing three young birds (Bendire, Life Hist. N. A. Bds., 1895, 71). L. B. Bishop has a male taken by H. W. Marsden at Julian, San Diego County, November 8, 1906, and F. E. Blaisdell noted it in the Volcan Mountains, August 21, 1884 (Belding, Land Bds. Pac. Dist., 1890, 63).

188. (402a) **Sphyrapicus varius nuchalis** Baird. RED-NAPED SAPSUCKER. Occasional in winter. H. A. Gaylord took a specimen near Pasadena De-

cember 26, 1895, and J. Grinnell took a male in the same vicinity, February 13, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 25). J. Pringle took a female in the Arroyo Seco, October 22, 1900. H. S. Swarth took a female near Los Angeles, October 17, 1899 (Condor II, 1900, 37), and a male in the same locality, February 18, 1901 (Condor III, 1901, 66). F. O. Johnson took a male at Riverside, December 26, 1889 (Swarth, Condor XII, 1910, 107). A female of the year was brought to F. Stephens by a neighbor, who shot it in his orchard near Witch Creek, San Diego County, November 2, 1891 (Bendire, Life Hist. N. A. Bds., 1895, 88). L. Belding took a male about thirty-five miles east of San Diego, January 23, 1884 (Land Bds. Pac. Dist., 1890, 65).

189. (403) **Sphyrapicus ruber ruber** (Gmelin). RED-BREASTED SAPSUCKER.

Breeds in the Transition zone in the mountains, from 5000 to 8500 feet altitude. More or less common in winter in wooded districts of the lowlands and along the base of the mountains. In June, 1907, I found this bird fairly common at Bear Valley in the San Bernardino Mountains. Specimens taken proved to be breeding birds, but I found no nests. C. B. Linton took two immature birds on San Clemente Island, October 11, 1907. They were erroneously recorded as being of the last species (Condor X, 1908, 84).

190. (404) **Sphyrapicus thyroideus** (Cassin). WILLIAMSON SAPSUCKER.

Fairly common resident of the higher mountains, south to the San Bernardino Range. Occasional to the lower country in winter. J. Grinnell found this bird a fairly common resident of the Canadian and upper edge of the Transition zone in the San Bernardino Mountains, where several nests containing young were found in June, 1905, and June, 1906 (Univ. Calif. Publ. Zool. v, 1908, 64). A nest found by J. Dixon at Dry Lake, June 22, 1905, contained three small young and two infertile eggs, which were preserved (Condor VII, 1905, 140). G. F. Morcom has noted this sapsucker at Pasadena in midwinter, and H. S. Swarth took a female at Los Angeles, November 14, 1900 (Condor III, 1901, 66).

191. (407a) **Melanerpes formicivorus bairdi** Ridgway. CALIFORNIA WOODPECKER.

Common resident of the oak regions. Less plentiful in the mountains, up to about 6500 feet. Breeds mostly in April and May. L. Peyton informs me that this bird is a common breeder in the Sespe Valley, Ventura County. I have found it locally common in the oak regions of Santa Barbara, Los Angeles and Orange counties, and it was noted by L. Belding as a common resident throughout the interior of San Diego County (Land Bds. Pac. Dist., 1890, 69). R. Arnold took five fresh eggs in the San Fernando Valley, Los Angeles County, April 5, 1892, and H. J. Lelande took four fresh eggs near Pasadena, June 3, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 26).

192. (408) **Asyndesmus lewisi** Riley. LEWIS WOODPECKER.

Breeds in San Luis Obispo County and probably also in Santa Barbara County, though I have seen no nesting records for the latter. Noted by Lawrence and Sidney Peyton near Sespe, Ventura County, in summer. Occurs

commonly in winter throughout the oak regions of southern California and occasionally on the mountains among the firs. Noted in the vicinity of Pasadena by F. S. Daggett as early as September 30 (1896), and by J. Grinnell as late as May 4 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 26). According to H. E. Wilder, a common, though irregular visitant to the San Bernardino Mountains. Observed on one occasion through the entire summer in the San Bernardino Valley. Found common at Witch Creek, San Diego County, by H. W. Marsden, during the fall and winter of 1906 (Condor ix, 1907, 27). Seen by F. E. Blaisdell at Temecula, San Diego County, November 14, 1883, and found abundant in the Volcan Mountains, during September and October, 1884 (Belding, Land Bds. Pac. Dist., 1890, 70). Recorded by J. G. Cooper as not uncommon in the Cuyamaca Mountains in the spring of 1862 (Am. Nat. viii, 1874, 16).

193. (412a) **Colaptes auratus luteus** Bangs. NORTHERN FLICKER.

Occasional straggler in winter. Recorded as follows: One specimen taken by J. G. Cooper at Saticoy, Ventura County, November 21, 1872 (Proc. Cal. Acad. Sci. vi, 1875, 200). Female by H. S. Swarth near Los Angeles, February 20, 1901 (Condor iii, 1901, 66). Male by E. C. Thurber at Alhambra, Los Angeles County, February 7, 1890 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 26), and female by A. Williamson in the same locality, November 4, 1904 (Richardson, Condor vii, 1905, 53). Female by F. Ball near San Bernardino in January, 1885 (Auk ii, 1885, 383).

194. (413) **Colaptes cafer collaris** Vigors. RED-SHAFTED FLICKER.

Common resident of wooded localities from the coast to about 9000 feet in the mountains. Also occurs on most of the islands of the Santa Barbara group. More widely distributed in winter. In some sections where trees are scarce, it nests in holes in banks. Eggs are generally deposited during late April and the month of May. C. E. Groesbeck found a nest containing five fresh eggs in the San Fernando Valley, Los Angeles County, April 16, 1896, and H. A. Gaylord took four slightly incubated eggs near Pasadena, June 15, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 26). F. S. Daggett has two hybrids between this species and the last, and several other hybrid flickers have been taken in southern California.

195. (418b) **Phalaenoptilus nuttalli californicus** Ridgway. DUSKY POOR-WILL.

Fairly common in spring, summer and fall, from the foothills up to over 8000 feet in the mountains. Also occurs on some of the Santa Barbara Islands. Much less plentiful in winter. Breeds mostly in April and May, but eggs may be found from March until late June. B. W. Evermann recorded this species as a summer resident of Ventura County, though not common (Auk iii, 1886, 179). It was noted by J. Grinnell up to over 8000 feet on Mt. Piños, Ventura County (Auk xxii, 1905, 383). H. J. Lelande took a male on Anacapa Island, April 6, 1906; C. H. Richardson, Jr., found it fairly plentiful on Catalina Island in April (Condor x, 1908, 66), and J. Grinnell took a female on San Clemente Island, March 31, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 14).

The type specimen of the egg of this species (no. 25937 coll. U. S. Nat. Museum) is one of a set of two eggs taken near Monrovia, Los Angeles County, May 4, 1893, and presented to the National Museum by R. H. Lawrence (Bendire, Life Hist. N. Am. Bds., 1895, 159). F. M. Palmer took two slightly incubated eggs near Eagle Rock, Los Angeles County, June 24, 1900 (Condor II, 1900, 130), and Antonin Jay took two eggs, incubation commenced, near Monrovia, June 29, 1902. L. H. Miller has taken eggs in the Temescal Mountains, near Riverside, and A. M. Ingersoll took a set of two eggs advanced in incubation, near San Diego, March 22, 1895 (Barlow, Nidologist II, 1895, 126). The poor-wills occurring in the southern part of San Diego County and the northern part of Lower California are intermediate toward the form *Phalaenoptilus nuttalli nitidus* Brewster (Bishop, Condor VII, 1905, 142; Anthony, Auk XII, 1895, 139).

196. (420d) **Chordeiles virginianus hesperis** Grinnell. PACIFIC NIGHT-HAWK.

Summer resident of the Boreal and upper part of the Transition zone in the San Bernardino Mountains. Occasional visitant to the valleys during migrations. June 18, 1905, J. Grinnell took two fresh eggs of this bird, on the north side of San Gorgonio Peak, San Bernardino Mountains, at an altitude of about 9000 feet (Univ. Calif. Publ. Zool. v, 1908, 67). Mr. Grinnell also took a male bird at Pasadena, October 27, 1896 (Pub. 2, Pasadena Acad. Sci., 1898, 26).

197. (421) **Chordeiles acutipennis texensis** Lawrence. TEXAS NIGHT-HAWK.

Common summer resident of the mesas and dry washes, in late summer wandering up into the Transition zone in the mountains. Leaves for the south in August and early September, and returns mostly during the month of March. Eggs are generally deposited during May and early June. J. Grinnell took two fresh eggs near Pasadena, April 21, 1897, and H. S. Swarth took two slightly incubated eggs in the San Fernando Valley, Los Angeles County, July 11, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 27). I took an adult female on Santa Barbara Island, June 20, 1911. Dissection showed that she was breeding.

198. (422) **Cypseloides niger borealis** (Kennerly). BLACK SWIFT.

Occurs in southern California irregularly in the summer. Probably mostly migratory, but may occasionally breed. J. G. Cooper noted one bird at Santa Barbara in May, 1863 (Bryant, Zoe II, 1891, 128). H. S. Swarth saw a flock of at least two hundred birds flying over Sierra Madre, Los Angeles County, on the evening of May 27, 1898, and noted several birds in the San Fernando Valley, Los Angeles County, May 30, following. He also saw a bird near Los Angeles, June 29, 1900. Flocks were observed by J. Grinnell at Pasadena on two occasions toward the last of August. They were flying in a southeasterly direction (Pub. 2, Pasadena Acad. Sci., 1898, 27). Mr. Grinnell also saw two birds at an altitude of about 7000 feet in the San Bernardino Mountains,

July 16, 1906, and in the first part of July, 1907, he noted three birds in the same vicinity (Univ. Calif. Publ. Zool. v, 1908, 69).

F. Stephens informed Major Bendire that this species had been taken by R. B. Herron in the San Bernardino Mountains, where they appeared to be breeding. They were flying in behind a water fall that poured over a perpendicular cliff and one was found drowned in the basin at the foot of the pool (Life Hist. N. Am. Bds., 1895, 176). L. H. Miller saw three birds at about 5500 feet altitude in the San Bernardino Mountains, the first week in August, 1907. One of the birds flew into a niche in a cliff and remained there several minutes. Antonin Jay and myself saw a flock of eight or ten birds of this species at San Jacinto Lake, Riverside County, on the evening of May 28, 1911 (Condor XIII, 1911, 160). L. Belding saw a flock of twenty or more Black Swifts flying over the mesa near San Diego on the evening of May 21, 1881. They were noted again the following evening and a specimen secured (Land Bds. Pac. Dist., 1890, 79).

199. (424) **Chaetura vauxi** (J. K. Townsend). VAUX SWIFT.

Common spring and fall migrant in scattered flocks, sometimes tarrying in large companies around lakes or swamp lands. Noted by J. G. Cooper at Ventura, April 22, 1873 (Auk iv, 1887, 92), and by J. Mailliard at Santa Cruz Island in late April, 1898 (Bull. Cooper Orn. Club 1, 1899, 44). I have frequently observed it at Los Angeles in migrations, some times in company with the next species. In the latter part of April, 1904, I saw a flock of forty or fifty birds mingling with eave swallows that were nest building on a barn near Compton, Los Angeles County. H. S. Swarth has observed the species near Los Angeles in the spring from April 19 (1898) to May 18 (1899), and in the fall from August 4 to October 14 (1899). H. Robertson took two specimens at Los Angeles, April 25, 1900. L. Belding took two specimens from a small flock near San Diego, April 28, 1884. He also noted them in the same locality, April 16, 26 and 29, 1885 (Land Bds. Pac. Dist., 1890, 79).

200. (425) **Aëronautes melanoleucus** (Baird). WHITE-THROATED SWIFT.

Common resident of the mountainous and rugged hill regions, occasional on some of the Santa Barbara Islands. Common in winter in straggling flocks in the lower country. Breeds plentifully in May and June in almost inaccessible cliffs. So difficult are the nests to reach that few eggs have been taken. L. Peyton took four slightly incubated eggs near Sespe, Ventura County, May 29, 1910. H. G. Rising took two fresh eggs in the Santa Monica Mountains, June 16, 1897, and E. Simmons took two eggs, one-third incubated, near Pasadena, May 30, the same year (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 27). W. C. Hanna took four slightly incubated eggs near Colton, May 28, 1908 (Condor XI, 1909, 77). Florence Merriam Bailey saw four pairs of birds feeding young in crevices in the old mission at San Juan Capistrano, San Diego County, about the middle of July, 1907 (Condor IX, 1907, 169).

201. (429) **Archilochus alexandri** (Bourcier & Mulsant). BLACK-CHINNED HUMMINGBIRD.

J. Grinnell says of this species: "It is a common summer resident from the

lowlands to the summits of the mountains but most abundant in the foothill regions, where it breeds in the cañons in some years by the thousands. Nests are generally situated near a stream and are found mostly after the middle of May. The abundance of the hummingbirds is very variable, depending on the growth of flowering plants. Usually after a wet winter they are far more numerous than after a dry one. This species arrives in the vicinity of Pasadena from the middle of April to the first week in May and the majority disappear by the last of July. Extreme records at Pasadena are April 3 (1895), and September 3 (1895). By the first of July when the vegetation of the foothills becomes dry and flowers cease to bloom, the hummingbirds are found in countless thousands at higher elevations (6000 to 8500 feet) where summer is just dawning" (Pub. 2, Pasadena Acad. Sci., 1898, 27). Extreme nesting dates are as follows: Two sets, of two fresh eggs each, taken by G. Willett at Arcadia, Los Angeles County, April 26, 1906, and set of two fresh eggs taken by Antonin Jay near Whittier, Los Angeles County, July 19, 1903.

202. (430) ***Calypte costae*** (Bourcier). COSTA HUMMINGBIRD.

Common summer resident of the mesa and foothill regions and brush covered washes, ranging from the lowlands to the higher mountains during migrations. Less common in northern Ventura and Santa Barbara counties. Eggs are generally deposited in May and the first part of June. J. Grinnell's earliest and latest records for the species in the vicinity of Pasadena are, respectively, March 21 (1896) and September 26 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 28). N. S. Goss took a male at San Diego, March 17, 1884 (Belding, Land Bds. Pac. Dist., 1890, 83), and J. Grinnell saw an adult male on San Clemente Island, March 30, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 15). I found this hummer rather common in the cactus patches on Santa Barbara Island during June, 1911. On June 19, I noticed a female feeding young just able to fly. H. Robertson took a set of eggs near Pasadena, April 19, 1899, and J. Grinnell took two slightly incubated eggs in the same locality, June 28, 1894 (Pub. 2, Pasadena Acad. Sci., 1898, 28).

203. (431) ***Calypte anna*** (Lesson). ANNA HUMMINGBIRD.

Common throughout the year from the lowlands to the foothills, and, in the latter part of June and the month of July, may be found up to 9000 feet in the mountains. Fairly plentiful in winter on the Santa Barbara Islands. "Like all hummingbirds it follows the flowers and its local presence or absence is governed by their abundance or scarcity. In August and September hundreds of Anna Hummers are to be found in the stubble fields and sunflower patches, attracted by the flowers of the 'tar-weed'. During the winter months they are found in profusion around the blossoming eucalyptus trees. In January and February, when the weather is mild, they appear high on the mountain sides among the flowering manzanitas and in March and April in the blossoming orange groves in the valley and among the currant bushes on the hill sides" (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 28). The Anna Hummer is our earliest breeding bird. It nests commonly through February and March, and eggs may be found from December until late in July. A. I. McCormick took two considerably in-

cubated eggs near Los Angeles, December 21, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 28), and H. Robertson took two eggs near Pasadena, August 17, 1900.

204. (433) **Selasphorus rufus** (Gmelin). RUFous HUMMINGBIRD.

Common in late summer, fall and spring; apparently absent in midwinter. Particularly abundant in the blossoming orange groves during the spring migration in April. In July and August it is plentiful in the mountains up to at least 9000 feet altitude. H. S. Swarth saw a male at Los Angeles, February 20, 1901, probably an early migrant.

205. (434) **Selasphorus alleni** Henshaw. ALLEN HUMMINGBIRD.

Breeds in the coast belt as far south as Ventura County, and is a permanent resident on the Santa Barbara Islands. Migrant over the rest of southern California west of the mountains. Occurs in July and August up to 9000 feet in the mountains. Frequently found in company with the last species during migration seasons. I have noted it on Santa Cruz Island in midwinter, and Bradford Torrey saw a bird in a park in San Diego, January 26, 1908 (Condor XI 1909, 173). According to J. Grinnell, this hummer appears on Mt. Piños, Ventura County, about July first and becomes common a few days after that date. The males appear first and are followed by the females and young (Auk XXII, 1905, 384). F. Stephens has taken birds of this species in San Diego County in June and July but he considers them early migrants and not breeding birds as is implied by Major Bendire in his "Life Histories".

J. H. Bowles finds the Allen Hummingbird to breed commonly at Santa Barbara, and has taken eggs in that locality as early as February 13 (1912) (Condor XIV, 1912, 77). H. C. Burt took two slightly incubated eggs with the female bird, near Santa Paula, Ventura County, April 5, 1911. He also found newly hatched young in the same locality, April 12, following, and, on May 19, found eggs far advanced in incubation. C. B. Linton informs me that this bird begins to nest on the Santa Barbara Islands the latter part of March, and fresh eggs may be found through April and May. Mr. Linton took two fresh eggs on San Clemente Island, March 31, 1907, and J. Grinnell took a partially incubated set on the same island, March 28, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 15). R. M. Perez took two sets of fresh eggs on Catalina Island, April 15 and 16, 1911.

206. (436) **Stellula calliope** (Gould). CALLIOPE HUMMINGBIRD.

Common summer resident of the upper Transition and Canadian zones in the mountains, south to the San Jacinto Range. Occasional, during migrations, on the lowlands and mesas along the base of the mountains. H. S. Swarth saw a male near Los Angeles, April 23, 1898, and G. F. Morcom saw a male in a garden in Los Angeles in spring (Condor II, 1900, 37). L. H. Miller took an adult male at Riverside, in late March, 1892, and N. S. Goss took a pair in the Volcan Mountains, San Diego County, April 15, 1884 (Belding, Land Bds. Pac. Dist., 1890, 89).

J. Grinnell found this hummingbird fairly common above 6500 feet on Mt. Piños, Ventura County, in the summer of 1904 (Auk XXII, 1905, 384). Mr. Grinnell also took several sets of eggs in the San Bernardino Mountains, from

June 11 to June 30, 1906 (Univ. Calif. Publ. Zool. v, 1908, 72). I took two fresh eggs at Bear Valley, San Bernardino Mountains, June 23, 1907. F. Stephens found a nest containing newly hatched young in the Santa Ana Cañon, San Bernardino Mountains, in May, 1885 (Bendire, Life Hist. N. Am. Bds., 1895, 219). The altitude in this instance was only about 3000 feet, an exceptionally low elevation for the breeding of this bird. Mr. Stephens has a male of this species that was taken by A. W. Anthony in the San Jacinto Mountains, July 3, 1895. This is, so far as I know, our most southern summer record.

207. (444) **Tyrannus tyrannus** (Linnaeus). KINGBIRD.

One record. Immature male taken by W. B. Judson at Santa Monica, Los Angeles County, August 31, 1895 (Gaylord, Avifauna I, 1895, 29). Now no. 10253 collection University of California Museum of Vertebrate Zoology.

208. (447) **Tyrannus verticalis** Say. ARKANSAS KINGBIRD.

Common summer resident of the lowlands and mesas, occasional up to 7000 feet in the mountains. Arrives in March and leaves in September. Breeds mostly in May and early June. I took an adult male at Bear Valley, 6750 feet in the San Bernardino Mountains, June 24, 1907 (Condor XII, 1910, 44). Extreme nesting dates are: Five eggs, fresh, taken by Antonin Jay at Cerritos, Los Angeles County, May 2, 1897, and four eggs, half incubated, taken by W. M. Pierce in San Antonio Cañon, July 8, 1901.

209. (448) **Tyrannus vociferans** Swainson. CASSIN KINGBIRD.

Fairly common resident, locally, in the Lower Sonoran zone. Winters regularly north to Santa Barbara. Breeds mostly in April and early May. H. C. Burt informs me that the Cassin Kingbird is a fairly common breeder in the vicinity of Santa Paula, Ventura County. He took a set of five eggs, May 10, 1910. In July, 1893, J. Grinnell found several nests containing young birds in the Simi Valley, Ventura County (Pub. 2, Pasadena Acad. Sci., 1898, 29). In the summer of 1902, G. F. Morcom noted a pair of this species and a pair of Arkansas Kingbirds nesting in the same eucalyptus tree in a yard in Los Angeles. I took four slightly incubated eggs, with the female bird, near Whittier, Los Angeles County, May 4, 1894. The Cassin Kingbird is recorded by C. S. Sharp as an uncommon breeding bird in the vicinity of Escondido, San Diego County (Condor IX, 1907, 88). According to L. Belding, it is a common summer resident around San Diego (Land Bds. Pac. Dist., 1890, 92). J. G. Cooper noted it breeding in that vicinity as early as March 20 (Land Bds. Cal., 1870, 315).

210. (454) **Myiarchus cinerascens cinerascens** (Lawrence). ASH-THROATED FLYCATCHER.

Common summer resident from the oak regions of the mesas up to about 6000 feet in the mountain cañons; less plentiful near the coast. Arrives in April and leaves mostly during the first part of September. Breeds most plentifully in late May and early June. H. C. Burt has taken several sets of eggs near Santa Paula, Ventura County, in early June. W. B. Judson took five fresh eggs in the San Gabriel Cañon, Los Angeles County, May 16, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 29), and Antonin Jay took four fresh eggs near Monrovia,

June 29, 1902. I found this fly-catcher nesting commonly near Highlands, San Bernardino County, and up to about 6000 feet in the mountain cañons. It was noted as common in summer at San Diego, by L. Belding, and at Poway, San Diego County, by F. E. Blaisdell (Land Bds. Pac. Dist., 1890, 93).

211. (456) **Sayornis phoebe** (Latham). PHOEBE.

One record. H. S. Swarth took a male near San Fernando, Los Angeles County, February 14, 1901 (Condor III, 1901, 66). Original number 1849, collection H. S. Swarth.

212. (457) **Sayornis sayus** (Bonaparte). SAY PHOEBE.

Fairly common breeding bird in the foothill regions of Santa Barbara and Ventura counties; less common throughout the rest of southern California. Much more plentiful in winter, at which season it is abundant from the ocean to the base of the mountains. In the vicinity of Los Angeles the majority of this species arrive in September and leave in March. Breeds mostly in April. L. Peyton took three slightly incubated eggs at Sespe, Ventura County, May 24, 1909, and J. S. Appleton finds it a common breeder in the Simi Valley, Ventura County. On April 3, 1906, I took a set of five fresh eggs, and found another nest containing four half grown young, in a ravine near Whittier, Los Angeles County. According to F. Stephens, the Say Phoebe is a rare summer resident of the San Bernardino Valley (Belding, Land Bds. Pac. Dist., 1890, 94). J. E. Law took two half incubated eggs near Elsinore, Riverside County, April 28, 1901 (Condor III, 1901, 186), and O. W. Howard and H. J. Lelande found it nesting commonly in the San Jacinto Valley in May, 1910. A nest containing fresh eggs was found by B. P. Carpenter at Escondido, San Diego County, April 22, 1906 (Sharp, Condor IX, 1907, 88), and L. Belding noted one or two pairs nesting near San Diego in April, 1885 (Land Bds. Pac. Dist., 1890, 94).

213. (458) **Sayornis nigricans** (Swainson). BLACK PHOEBE.

Common resident of the lowlands and occasional along streams up to 7000 feet in the mountains. Usually found near water and especially plentiful around barns and stock yards. Noted by C. B. Linton on several of the Santa Barbara Islands. Breeds mostly in May. H. J. Lelande took four fresh eggs near San Gabriel, Los Angeles County, March 1, 1897, and Antonin Jay found three fresh eggs in the San Fernando Valley, Los Angeles County, June 5, 1898.

214. (459) **Nuttallornis borealis** (Swainson). OLIVE-SIDED FLYCATCHER.

Common summer resident of the mountains from 3000 to 9000 feet altitude. Frequently seen on the mesas and lowlands during migrations. Arrives in April and May and leaves mostly in September. H. S. Swarth has noted it near Los Angeles in the spring as late as June 4 (1898), and I took a male at Colton, San Bernardino County, June 3, 1906. It was noted by J. R. Pemberton as breeding commonly in the Santa Ynez Mountains, Ventura County, in the summer of 1909 (Condor XII, 1910, 19). I found it breeding plentifully at Bear Valley, 6750 feet in the San Bernardino Mountains, in June, 1907, and J. Grinnell records three slightly incubated eggs taken at Dry Lake, 9000 feet in the San Bernardino Mountains, June 23, 1906 (Univ. Calif. Publ. Zool. v, 1908, 76). F. Stephens

took a set of three eggs in the Cuyamaca Mountains, San Diego County, June 5, 1889 (Bendire, Life Hist. N. Am. Bds., 1895, 283).

215. (462) **Myiochanes richardsoni richardsoni** (Swainson). WESTERN WOOD PEWEE.

Common summer resident of the cañons and the oak and coniferous forests, up to 9000 feet in the mountains. Occasional on the Santa Barbara Islands. More or less common, during migrations, along streams and in wooded localities in the lowlands. Eggs are generally deposited during the latter part of May and the first part of June. J. Grinnell observed the species in the vicinity of Pasadena from April 18 (1895) to September 30 (1894) (Pub. 2, Pasadena Acad. Sci., 1898, 30). Mr. Grinnell took an adult female on San Nicolas Island, May 20, 1897, and an adult male May 23, following (Pub. 1, Pasadena Acad. Sci., 1897, 10). He also saw one bird on San Clemente Island, June 3, the same year (Pub. 1, Pasadena Acad. Sci., 1897, 15). H. J. Lelande took three fresh eggs near Pasadena, May 1, 1899, and H. A. Gaylord took three slightly incubated eggs in the same locality, July 11, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 30).

216. (464) **Empidonax difficilis difficilis** Baird. WESTERN FLYCATCHER.

Common summer resident of the cañons in the foothill and mesa regions; also on the larger Santa Barbara Islands. Found all over the lowlands during migrations. L. Belding saw one bird at San Diego in December (Land Bds. Pac. Dist., 1890, 99), so it may occasionally winter within our southern limits. Breeds mostly during late May and early June. J. Grinnell has noted the species in the vicinity of Pasadena from March 30 (1896) to October 10 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 30). H. S. Swarth took a male near Los Angeles, March 21, 1899, and J. G. Cooper saw the species at Saticoy, Ventura County, March 18, 1873 (Auk IV, 1887, 92). J. Grinnell took four considerably incubated eggs near Pasadena, May 11, 1895, and took four slightly incubated eggs in the same locality, June 29, following (Pub. 2, Pasadena Acad. Sci., 1898, 30).

217. (466) **Empidonax trailli trailli** (Audubon). TRAILL FLYCATCHER.

Common summer resident from the willow thickets of the lowlands to more than 5000 feet in the mountain cañons. Occurs in migrations as high as 8000 feet. Breeds most plentifully in June. Noted by J. Grinnell at Pasadena from May 4 (1895) to September 26 (1896). A. I. McCormick took three slightly incubated eggs near Los Angeles, May 25, 1895, and H. A. Gaylord took three slightly incubated eggs near Pasadena, July 11, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 30).

218. (468) **Empidonax hammondi** (Xantus). HAMMOND FLYCATCHER.

Common migrant, mostly to the cañons and mesas along the base of the mountains. Has been recorded as nesting in southern California but all such records are probably referable to the next species. B. W. Evermann took a specimen at Santa Paula, Ventura County, April 10 (Auk III, 1886, 180). H. A. Gaylord noted it in the spring near Pasadena from April 9 (1896) to May 9 (1896), and J. Grinnell noted it in the fall in the same vicinity from the first week

in September until October 30 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 30). H. Robertson took specimens near Pasadena, April 7, 1899. It was noted in April in various parts of San Diego County by L. Belding, F. Stephens and others (Land Bds. Pac. Dist., 1890, 102).

219. (469) **Empidonax wrighti** Baird. WRIGHT FLYCATCHER.

Robert Ridgway of the United States National Museum writes me that, after a careful study of a large series of specimens by himself and H. C. Oberholser, they have arrived at the conclusion that the southern California birds frequently recorded during the past few years as *Empidonax griseus* Brewster, are all referable to *Empidonax wrighti* and that *E. griseus* does not occur in California at all. Therefore I have included under this species many notes that have heretofore been referred to *E. griseus*.

Wright Flycatcher is a common breeding bird in the mountains from 5500 to 9000 feet altitude, its breeding range extending south at least to the San Jacinto Range. It is fairly common in the foothills along the base of the mountains, during migrations, and a few remain through the winter. J. G. Cooper took specimens in winter at Saticoy, Ventura County (Auk iv, 1887, 92); H. S. Swarth took a specimen near Los Angeles, November 5, 1897, and H. A. Gaylord took one near El Monte, Los Angeles County, November 7, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 31). According to F. Stephens, it is a rare migrant through the San Bernardino Valley (Belding, Land Bds. Pac. Dist., 1890, 103). H. W. Marsden took a female April 20 and a male April 22, 1903, at Redlands, San Bernardino County (Bishop, Condor vii, 1905, 142). It was noted on several occasions by F. E. Blaisdell at Poway, San Diego County, and L. Belding saw it in spring migration at San Diego, April 20, 1884 (Land Bds. Pac. Dist., 1890, 103).

J. Grinnell found it in summer on the slopes of Mt. Waterman, Los Angeles County (7500 to 8500 feet) (Pub. 2, Pasadena Acad. Sci., 1898, 31). Mr. Grinnell also found it breeding in the San Bernardino Mountains in 1905 and 1906. He noted newly hatched young as early as June 15 (1905), and took four partially incubated eggs July 14, 1906 (Univ. Calif. Publ. Zool. v, 1908, 78). In June, 1907, I found it breeding plentifully at Bear Valley and Bluff Lake in the San Bernardino Mountains, from 7000 to 8000 feet altitude. I took a set of four half incubated eggs June 20, and a set of three, slightly incubated, on June 22. This is undoubtedly the species found nesting by A. W. Anthony in July, 1895, on San Jacinto Mountain up to 9500 feet, and recorded by him as *Empidonax hammondi* (Auk xii, 1895, 390).

220. (471) **Pyrocephalus rubinus mexicanus** Sclater. VERMILION FLYCATCHER.

Occasional straggler from the desert. Recorded as follows: Male seen by Bradford Torrey at Santa Barbara, March 15, 1907 (Condor ix, 1907, 109). Two males taken by J. G. Cooper near Ventura, October 21 and November 7, 1872 (Auk iv, 1887, 92). Adult female taken by G. F. Morcom at Los Angeles, October 17, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 31). Adult male and adult female taken by H. A. Gaylord near El Monte, Los Angeles County,

December 8, 1895, and February 8, 1896 (Auk XIII, 1896, 258). Immature male taken by Mr. Gaylord in the same locality, October 17, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 31). Male taken by H. Wright, also near El Monte, February 8, 1908 (Condor x, 1908, 91). Male taken by F. O. Johnson at Long Beach, December 26, 1894 (Swarth, Condor XII, 1910, 107). Specimen seen by F. E. Blaisdell, that was killed near Santa Ana, Orange County, December 9, 1884 (Belding, Land Bds. Pac. Dist., 1890, 105). Male taken by T. L. Hurd at Riverside, May 24, 1889 (Orn. & Ool. XIV, 1889, 94). Pair seen at Banning, Riverside County, by N. H. Hargrave in May, 1906. Adult male taken by N. K. Carpenter at Escondido, San Diego County, April 6, 1902 (Condor IV, 1902, 94). One bird seen by J. G. Cooper near San Diego (Auk IV, 1887, 92). There are several other unrecorded instances of the occurrence of this bird in southern California west of the mountains, and we may safely conclude that it is more common in this locality than has generally been supposed.

221. (474e) *Otocoris alpestris actia* Oberholser. CALIFORNIA HORNED LARK.

Abundant resident from the coast to the base of the mountains. Occurs in summer up to about 7000 feet and, after the nesting season, may be found at even higher altitudes. Nesting begins early and continues well into the summer, at least two broods being raised in a season. I found the species fairly common at Bear Valley, 6750 feet in the San Bernardino Mountains, during June, 1907. The actions of the birds showed that they were breeding. About twenty birds were seen by J. Grinnell at the very summit of San Gorgonio Peak, 11,485 feet altitude, July 16, 1906 (Univ. Calif. Publ. Zool. v, 1908, 82). Mr. Grinnell found fully fledged young near Pasadena the first week in March (Pub. 2, Pasadena Acad. Sci., 1898, 31), and Antonin Jay took two fresh eggs near Nigger Slough, Los Angeles County, June 14, 1903.

222. (474m) *Otocoris alpestris insularis* C. H. Townsend. ISLAND HORNED LARK.

Abundant resident on the Santa Barbara Islands; occasional to the mainland in winter. Type specimen taken by Mr. Townsend on San Clemente Island, January 25, 1890 (Proc. U. S. Nat. Mus. XIII, 1890, 140). Robert Ridgway says of this subspecies: "The characters of this form are most pronounced in specimens from the more northern islands of San Miguel, Santa Rosa and Santa Cruz, those from the more southern islands of San Clemente, Santa Barbara, San Nicolas and Santa Catalina inclining toward the mainland form, *O. a. actia*, thus indicating the origin of this insular form" (Bds. N. & Mid. Am. IV, 1907, 318). The breeding season of the Island Horned Lark, like that of the mainland bird, is quite extensive and at least two broods are reared in a season. I have found full grown young early in June.

J. Grinnell found a nest containing four young on Santa Barbara Island, May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 5), and Antonin Jay took three eggs, advanced in incubation, on the same island, July 3, 1909. C. B. Linton took three half-incubated eggs on San Nicolas Island, May 12, 1910, and took a set of four, slightly incubated, the following day. J. Grinnell took three slightly incu-

bated eggs on San Clemente Island, June 3, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 16), and O. W. Howard took a set of three, incubation commenced, on San Miguel Island, June 21, 1910.

A male of this subspecies, now no. 17161 collection J. E. Thayer, was taken by C. B. Linton at Alamitos Bay, Los Angeles County, January 18, 1908. It was one of a small flock, seemingly of the same kind. In the original record of this specimen (Condor x, 1908, 181), Mr. Linton made a mistake as to the date of capture.

223. (476) ***Pica nuttalli*** (Audubon). YELLOW-BILLED MAGPIE.

Formerly a common resident of the oak regions, south to northern Los Angeles County. Much less plentiful at the present time. Still, however, fairly common, locally, in Santa Barbara and Ventura counties. Breeds in late March and early April. First described from specimens taken at Santa Barbara by Thos. Nuttall (Audubon, Bds. Am., elephant folio, iv, 1838, 450). According to early settlers in the Conejo Valley, on the line of Ventura and Los Angeles counties, Magpies were common in that region in the early 80's. At the present time, they are not to be found there. In the summer of 1908, J. S. Appleton saw a bird in the Simi Valley, Ventura County, about seven miles north of the Los Angeles County line. So far as I know, this is the most southern record for the species during late years. A specimen is recorded as having been taken by Dr. Hammond at San Diego (Baird, Pac. R. R. Rep. ix, 1858, 579). This specimen may have been mis-labeled, or possibly was an escaped cage bird.

In the early 60's, J. G. Cooper found the birds numerous near Santa Barbara and noted young nearly fledged by April 25 (Land Bds. Cal., 1870, 295). B. W. Evermann found them abundant in suitable places in Ventura County in the early 80's. On April 2, 1881, he obtained over eighty eggs in Wheeler Cañon, near Santa Paula (Auk III, 1886, 181). A small colony of birds still breeds in Alisio Cañon, not far from Wheeler Cañon, and H. C. Burt has taken several sets of eggs in this locality. He took six slightly incubated eggs April 24, 1904, and six eggs, advanced in incubation, April 30, 1905. On April 16, 1910, but one set of eggs was found, the rest of the nests containing newly hatched young. The colony was again visited April 9, 1911, and several sets of fresh and slightly incubated eggs were secured.

224. (478a) ***Cyanocitta stelleri frontalis*** (Ridgway). BLUE-FRONTED JAY.

Common resident of the Transition zone in coniferous forests of the mountains. Occasional to the foothills and even to the oak regions of the mesas during severe winters. Breeds mostly in early May. I found several nests of this bird in the San Bernardino Mountains in June, 1906 and 1907. They all contained young birds. N. S. Goss took several sets of eggs near Julian, San Diego County, in the spring of 1884 (Auk II, 1885, 217).

225. (481) ***Aphelocoma californica californica*** (Vigors). CALIFORNIA JAY.

Common resident from the coast to over 6000 feet in the mountains. Breeds mostly in April. Although the A. O. U. *Check-List* assigns the bird occurring

from Los Angeles and San Bernardino counties, south to Lower California, to the form *Aphelocoma californica obscura* Anthony, I am informed by J. Grinnell that, after a careful study of the question by himself and H. S. Swarth, they have arrived at the conclusion that all the southern California birds are referable to *californica* and that *obscura* has no standing as a bird of California.

J. Grinnell found a nest of the California Jay that contained young about two-thirds grown on March 25, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 32). W. M. Pierce took four fresh eggs near Claremont, Los Angeles County, March 20, 1902, and I took four slightly incubated eggs at 5400 feet altitude in the San Bernardino Mountains, June 7, 1906.

226. (481.1) ***Aphelocoma insularis*** Henshaw. SANTA CRUZ JAY.

This well marked insular form is confined to Santa Cruz Island, where it is a common resident. The specimens from which the species was originally described were taken by H. W. Henshaw in June, 1875 (Auk III, 1886, 452). The nesting season is in April and early May. In November and December, 1907, C. B. Linton and myself found this jay to be one of the most abundant land birds on Santa Cruz Island. They were singularly tame and unsuspicious for a blue jay and we had no trouble in securing all the specimens we desired. J. Mailliard found two nests containing eggs, and two nests containing young birds, the latter part of April, 1898 (Bull. Cooper Orn. Club I, 1899, 43). R. H. Beck took three sets of eggs May 8, 1897. Two sets were of three eggs each and the other was of two (Bull. Cooper Orn. Club, I, 1899, 6). On April 28 and 29, 1906, O. W. Howard found seven nests of this species in scrub oak trees. Two of the nests contained, respectively, five slightly incubated eggs and three eggs, incubation commenced. The other five nests contained young birds. J. S. Appleton took two fresh eggs June 7, 1906, probably a second laying.

227. (486) ***Corvus corax sinuatus*** Wagler. RAVEN.

Common resident, locally, in the more unsettled portions of the hill country. Particularly plentiful on the Santa Barbara Islands where, owing to its reputation as a destroyer of newly-born lambs, it is shot by the sheep men at every opportunity. The bird from the Santa Barbara Islands has been referred by Robert Ridgway to the race *Corvus corax clarionensis* Rothschild & Hartert (Bds. N. & Mid. Am. III, 1904, 265). I consider this conclusion erroneous, as specimens which I secured on the islands are identical with others from the mainland. The Raven begins nesting in the latter part of March, and fresh eggs may be found until late in April. If the nest is robbed, a second and even a third set will be laid. Lawrence and Sidney Peyton have taken several sets of eggs in Castaic Cañon, northern Los Angeles County. I have taken a number of sets on the Santa Barbara Islands, and in the Puente Hills, near Whittier, Los Angeles County. In the latter locality the birds were common fifteen years ago but are now rare. According to L. Belding, the Raven is a common resident in the vicinity of San Diego (Land Bds. Pac. Dist., 1890, 112). Extreme nesting dates are: Five fresh eggs taken by G. Willett near Whittier, March 14, 1895 (Oologist XII, 1895, 110), and three slightly incubated eggs taken by W. L. Chambers near Santa Monica, May 9, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 32).

228. (488b) **Corvus brachyrhynchos hesperis** Ridgway. WESTERN CROW.

Common resident of the lowlands. Breeds in the willow regions mostly in April. More widely distributed in winter. A. M. Ingersoll informs me that the Crow nests along the Sweetwater and San Diego rivers, a few miles from the coast in southern San Diego County. This is the most southern breeding record I have seen, though it is known to cross the Mexican line in winter. Antonin Jay took four fresh eggs in the San Fernando Valley, Los Angeles County, March 27, 1898, and R. Arnold took five considerably incubated eggs in the same locality, May 17, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 32).

229. (491) **Nucifraga columbiana** (Wilson). CLARKE NUTCRACKER.

Common resident of coniferous forests in Upper Transition and Boreal zones in the mountains, from 6000 feet to timber line. In winter descends to lower altitudes, straggling rarely to the valleys. At this season ranges south to, or very near, the Mexican line. I have taken full-grown young at Bear Valley, in the San Bernardino Mountains, early in June, so the nesting season must be early, probably in the latter part of March and the first part of April. At this time of year, owing to the deep snow, the nesting grounds are almost inaccessible and, up to the present time, I know of no eggs having been taken in southern California.

J. Grinnell found Nutcrackers abundant on Mt. Piños, Ventura County, in June, 1904. They were occasionally observed as low as 5500 feet altitude (Auk XXII, 1905, 385). Mr. Grinnell also observed them on San Bernardino Peak, July 12, 1905, and in June and July, found them common at the head of the Santa Ana River and down as low as 6000 feet (Univ. Calif. Publ. Zool. v, 1908, 84). H. E. Wilder saw a bird at Riverside, October 15, 1898. This must be considered a very unusual occurrence. F. Stephens has a specimen, taken from a fair sized flock, on Laguna Mountain, San Diego County, February 21, 1877. The locality where this bird was secured is about twenty miles north of the Mexican line, and Mr. Stephens writes me that he does not doubt that the species crosses the boundary regularly in winter.

230. (492) **Cyanocephalus cyanocephalus** (Wied). PINYON JAY.

Resident of the mountains, mostly on the desert side. Irregular visitant to the mesas and foothills along the base of the mountains. Undoubtedly breeds in favorable localities in the coniferous forests, but I know of no eggs having been taken in southern California. I found the species common in the piñon timber near Gold Mountain, in the San Bernardino Range, in June, 1907, and F. S. Daggett noted it in large flocks at Bear Valley, June 12, 1897. H. A. Gaylord saw several large flocks flying north over Pasadena in the fall of 1894 (Nidologist III, 1896, 106), and J. Grinnell noted flocks every day or two in the same vicinity, September 1 to 21, 1895. They were flying northwest over the mesas and along the base of the mountains (Pub. 2, Pasadena Acad. Sci., 1898, 32). F. Stephens took one specimen and saw many others on Laguna Mountain, San Diego County, about twenty miles north of the Mexican boundary, February 21, 1877. He believes that the species crosses the line in winter in company with the last.

231. (495a) **Molothrus ater obscurus** (Gmelin). DWARF COWBIRD.

Although no cowbirds are recorded as having been taken in southern California, they have been seen here and the eggs have been frequently collected. Judging from the small size of the eggs, as well as from geographical reasons, it is probable that our cowbird is referable to the above form. J. E. Law saw a female Pacific Yellow-throat (*Geothlypis trichas arizela*) feeding a fully fledged young bird, undoubtedly of this species, near Compton, Los Angeles County, July 10, 1910. He was unable to secure the bird as it was lost to sight in the dense willow brush (Condor XII, 1910, 174). J. G. Cooper mentions seeing flocks of cowbirds on the east side of the summit of the Cuyamaca Mountains, San Diego County, at about 4500 feet altitude, in the spring of 1862 (Am. Nat. VIII, 1874, 17).

H. C. Burt took a cowbird's egg from a nest of the Yellow Warbler, near Santa Paula, Ventura County, June 18, 1904. L. Peyton found an egg in a nest of the Least Vireo, near Sespe, Ventura County, May 17, 1908, and in May, 1911, he found three nests of the Golden Pileolated Warbler, each of which contained one egg of the cowbird. The other southern California nesting records that have come to my attention, are all from Los Angeles County, where it seems to be fairly common, mostly in the willow regions of the lowlands. O. W. Howard has found several eggs of this species, all in nests of other birds, near Long Beach. Antonin Jay found an egg in a nest of the Pacific Yellow-throat, near Artesia, June 9, 1907, and found another in a Traill Flycatcher's nest, near Compton, July 10, 1910. He also found several eggs in the latter locality in July, 1911. R. M. Perez took an egg with a set of Pacific Yellow-throat's eggs, at Nigger Slough, May 7, 1910 (Condor XII, 1910, 133), and C. B. Linton took an egg with four eggs of the Western Gnatcatcher, in Elysian Park, Los Angeles, June 5, 1905.

232. (497) **Xanthocephalus xanthocephalus** (Bonaparte). YELLOW-HEADED BLACKBIRD.

Common resident of marsh lands in the lower country, south to San Diego County. Breeds, locally, on inland sloughs and tule-bordered ponds. Irregular in its breeding localities; may nest commonly in a marsh one year and be entirely absent the next. Scatters out over the lowlands in fall, winter and spring, the adult males generally being seen in bands by themselves, not mixing with the larger flocks which are made up of females and immature birds. Nests mostly in May and early June. I have found large colonies breeding at Nigger Slough, Los Angeles County, at San Jacinto Lake, Riverside County, and at various other localities in southern California. According to A. M. Ingersoll, this bird is seldom seen near San Diego, but probably breeds at Warner's Ranch, about fifty miles from the coast. It was noted in small flocks by W. O. Emerson at Poway, San Diego County, in the spring of 1884 (Bull. Cal. Acad. Sci. II, 1887, 428).

233. (498e) **Agelaius phoeniceus neutralis** Ridgway. SAN DIEGO RED-WING.

Abundant resident of the lowlands. Breeds mostly in the tule marshes, but

often in grain fields, mustard patches and sometimes even on the ground. Nests from early April through June.

234. (500) **Agelaius tricolor** (Audubon). TRICOLORED RED-WING.

Common resident of the lowlands. Breeds locally in tule marshes from the latter part of April through May. More widely distributed in winter. Originally described from specimens taken at Santa Barbara by Thos. Nuttall (Audubon, Bds. Am., elephant folio, v, 1839, 1).

235. (501.1) **Sturnella neglecta** Audubon. WESTERN MEADOWLARK.

Abundant resident of meadows and fields from the ocean to about 7000 feet in the mountains. Also on most of the Santa Barbara Islands. In winter gathers in good sized flocks where the food supply is most plentiful. Breeds mostly in April and May, though extreme sets have been taken much earlier, and J. Grinnell noted the birds carrying nesting material in January. G. F. Morcom took five slightly incubated eggs near Los Angeles, March 9, 1895, and E. Simmons took a set of four, slightly incubated, near Pasadena, June 7, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 33). H. Robertson took three eggs at Bear Valley, 6750 feet in the San Bernardino Mountains, June 28, 1894.

236. (504) **Icterus parisorum** Bonaparte. SCOTT ORIOLE.

Breeds in small numbers in the vicinity of San Diego. Occasionally straggles north to Los Angeles County. C. H. Marsh found a nest containing a single young bird, in Telegraph Cañon, ten miles from San Diego, May 16, 1890. The male parent bird was taken and sent to F. C. Browne (Auk VIII, 1891, 238). F. Stephens saw two males at San Diego in April, 1901, and saw a male in the same locality, June 2, following (Condor III, 1901, 94). A pair was seen by Kate Stephens in a garden at San Diego, many times during the latter part of April, 1906 (Condor VIII, 1906, 130). R. B. Herron took a male near San Bernardino, April 1, 1895 (Thurber, Auk XIII, 1896, 265), and H. E. Wilder took a male at Riverside, May 8, 1896. A bird of this species was sent to Hilda Wood Grinnell by her brother, who shot it at Glendora, Los Angeles County, May 6, 1904 (Condor XII, 1910, 46). W. B. Judson took a male in the San Fernando Valley, Los Angeles County, November 2, 1903 (Daggett, Condor VI, 1904, 22), and H. S. Swarth saw one near Los Angeles, April 19, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 33).

237. (505a) **Icterus cucullatus nelsoni** Ridgway. ARIZONA HOODED ORIOLE.

Common summer resident, mostly about orchards and gardens, but occurs also on brushy mesas and sometimes follows up the mountain cañons as high as 4000 feet. Generally arrives late in March and leaves during the first part of September. Breeds, ordinarily, from late April to early June. A favorite nesting site of this species is the under side of a palm leaf, and such nests are frequently noticed in gardens and parks, and among the ornamental trees along city streets. F. E. Blaisdell noted the Hooded Oriole at Poway, San Diego County, as early as March 11 (1885), and as late as September 20 (1884) (Belding, Land Bds. Pac. Dist., 1890, 125). W. M. Pierce took five

partially incubated eggs near Claremont, Los Angeles County, April 25, 1901, and H. J. Lelande found a nest containing one fresh egg, near Pasadena, August 3, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 33).

238. (508) **Icterus bullocki** (Swainson). BULLOCK ORIOLE.

Common summer resident from the lowlands to about 5000 feet in the mountain cañons. After the breeding season, occurs up to 8000 feet. Arrives from the south about the latter part of March and leaves mostly in September. Breeds, ordinarily, in May and the first part of June. F. E. Blaisdell noted the species at Poway, San Diego County, as early as March 17 (1885) (Belding, Land Bds. Pac. Dist., 1890, 126). Antonin Jay saw a male in Los Angeles, January 27 and 30, 1911 (Condor XIII, 1911, 75). C. B. Linton saw a male on San Nicolas Island, March 30 and 31, 1910. W. M. Pierce took six slightly incubated eggs near Claremont, Los Angeles County, April 25, 1901, and H. A. Gaylord took five eggs, incubation advanced, near Pasadena, July 18, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 34).

239. (509) **Euphagus carolinus** (Müller). RUSTY BLACKBIRD.

One record. C. B. Linton took a male on San Clemente Island, November 20, 1908 (Condor XI, 1909, 194). Recently no. 16659 collection John E. Thayer; now no. 21271, Univ. Calif. Mus. Vert. Zool.

240. (510) **Euphagus cyanocephalus** (Wagler). BREWER BLACKBIRD.

Abundant resident from the coast up to about 7000 feet in the mountain cañons. In winter occurs in large flocks in the lower country, feeding in meadows and orchards and around barn yards. Breeds mostly in April and early May. E. Davis has taken sets near Orange as early as March 16 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 34), and Antonin Jay took five fresh eggs at Nigger Slough, Los Angeles County, May 23, 1897.

241. (514a) **Hesperiphona vespertina montana** Ridgway. WESTERN EVENING GROSBEAK.

Fairly common winter visitant to the mountains, south at least to the San Gabriel Range. Occasionally straggles down to the foothills. E. B. Towne took an adult male near Pasadena, December 28, 1894. It was with a flock of Lark Sparrows in some oak trees (Nidologist III, 1896, 106). H. S. Swarth saw a bird of this species in the Arroyo Seco, above Pasadena, October 21, 1900, and took a female in the same locality, December 13, following (Condor III, 1901, 17). Mr. Swarth also took two females on Mt. Wilson, October 30, 1898 (Bull. Cooper Orn. Club I, 1899, 95), and saw another in the same vicinity, December 7, 1900. H. Robertson saw a bird in the Caluenga Pass, Los Angeles County, May 8, 1902.

242. (517a) **Carpodacus purpureus californicus** Baird. CALIFORNIA PURPLE FINCH.

Summer resident of the mountains, mostly above 4000 feet; south to San Diego County. Common in winter in the lowlands, frequenting thickets and bushy places in small companies. Probably crosses the Mexican line at this season. According to F. Stephens, this finch breeds in small numbers in the

Cuyamaca Mountains, San Diego County, within twenty-five or thirty miles of the Mexican line. Mr. Stephens has also found them on Smith Mountain, and he believes that they probably breed on all the mountains of San Diego County that carry fir timber.

243. (518) **Carpodacus cassinii** Baird. CASSIN PURPLE FINCH.

Abundant breeding bird in the Transition and Boreal zones of the mountains above 4000 feet, south to the San Jacinto Range. Occurs occasionally in winter in the foothill country, and sometimes straggles down into the valleys. From February 25 to April 26, 1901, H. S. Swarth found this species quite abundant in the vicinity of Los Angeles, feeding in the pepper trees and mustard patches (Condor III, 1901, 66). From June 23 to 26, 1906, J. Grinnell secured three nests of this bird near Dry Lake, about 9000 feet altitude in the San Bernardino Mountains. The nests contained four eggs each. One of the sets was fresh and the other two were advanced in incubation. As Mr. Grinnell saw full-grown young in the same locality, June 18, 1907, the breeding season must cover at least two months and a half (Univ. Calif. Publ. Zool. v, 1908, '89). F. Stephens has a pair of birds taken on San Jacinto Mountain, June 23, 1893. He informs me that he considers this the southern limit of their breeding range.

244. (519) **Carpodacus mexicanus frontalis** (Say). HOUSE FINCH.

The "California linnet" is an abundant resident everywhere from the coast to the mountains, and up the mountain cañons to an altitude of more than 5000 feet. After the breeding season they may be found up to at least 7500 feet. In winter they occur in large flocks in stubble fields and sunflower patches, but by early spring they are paired off and nesting everywhere, being particularly abundant around gardens and parks. They breed plentifully through April, May and June and raise at least two broods in a season. W. M. Pierce took four fresh eggs near Claremont, Los Angeles County, March 22, 1901, and F. B. Jewett noted a nest near Pasadena which contained four fresh eggs on August 1, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 35).

245. (519c) **Carpodacus mexicanus clementis** Mearns. SAN CLEMENTE HOUSE FINCH.

Common resident on the Santa Barbara Islands. Originally described from San Clemente (Auk xv, 1898, 258). I have examined specimens from several of the islands and fail to see that they differ appreciably from the mainland bird. J. Grinnell found this finch abundant on San Clemente Island in the summer of 1897. He took four fresh eggs on March 30, and five partially incubated eggs the day following. He also noted nearly fledged young March 28 and took incubated eggs on June 5 (Pub. 1, Pasadena Acad. Sci., 1897, 16). I have found the House Finch plentiful on all the Santa Barbara Islands except San Miguel. On this island I noted it only occasionally.

246. (521) **Loxia curvirostra minor** (Brehm). CROSSBILL.

Occasional winter visitant, south at least to Pasadena and Riverside. Four

males and two females taken by F. S. Daggett at Pasadena, December 26, 1898 (Bull. Cooper Orn. Club 1, 1899, 51), and male taken by A. van Rossem in the same locality, November 1, 1908. Adult male taken by H. E. Wilder at Riverside, January 17, 1909.

247. (521a) ***Loxia curvirostra stricklandi*** Ridgway. MEXICAN CROSS-BILL.

Rather rare summer resident of the higher Sierra Nevadas, south to the San Bernardino Range; also on the pine-topped hills of Santa Cruz Island. May occur in southern California in winter, but records are lacking for that season. Although southern California breeding birds are referred by the A. O. U. *Check-List* to the preceding form, specimens taken show that they are nearer to *stricklandi*. J. Grinnell informs me that they are really referable to *L. c. bendirei* (Ridgway, Proc. Biol. Soc. Wash. 11, 1884, 101), a form closely resembling *stricklandi* and not recognized by the A. O. U. Committee.

J. Grinnell took a pair of adult birds near the summit of Mt. Piños, Ventura County, July 6, 1904 (Auk XXII, 1905, 385). The same collector took two males and a female and saw several more birds, at an elevation of over 9100 feet in the San Bernardino Mountains, July 15, 1906 (Univ. Calif. Publ. Zool. v, 1908, 91). A. van Rossem found the species fairly common at Dry Lake, San Bernardino Mountains, the same locality where Mr. Grinnell secured his specimens, September 3, 1910, and took several specimens.

A. B. Howell and A. van Rossem found this bird in some numbers in the heavy timber at the summit of the hills of Santa Cruz Island, from April 24 to May 2, 1911, and secured four specimens. Mr. Howell believes that they were breeding at the time (Condor XIII, 1911, 210). It is an extremely peculiar fact that this species, which occurs on the mainland of southern California only on the highest mountains, never having been noted below 9000 feet, should prove to be a resident of Santa Cruz Island at an elevation of less than 2500 feet. As Santa Cruz is the only island of the Santa Barbara group that carries pine timber, it would naturally be the only island suitable for the home of a bird, like the crossbill, which would seem out of place anywhere except in a forest of conifers. Why it should occur in a state of isolation in the very limited pine forests of Santa Cruz, when there are so many localities in the mountains of the mainland that are seemingly much more adapted to its needs, is a question that seems to be almost unanswerable. We shall have to regard it as one of the more striking of the many strange facts that are continually being brought to the attention of the student of nature. This local peculiarity of the species is paralleled by the fact that it is known to occur in the pine and cypress forests of Guadeloupe Island, off the coast of Lower California. We may perhaps safely conclude that there is something in the combination of coniferous forests and "salty" atmosphere that is attractive to this bird and adapted to its necessities.

248. (529b) ***Astragalinus tristis salicamans*** (Grinnell). WILLOW GOLD-FINCH.

Abundant resident of the lowlands, south to the Mexican line. In sum-

mer almost wholly confined to the willow regions, but in winter congregates in flocks and wanders everywhere, even into the cañons of the mountains where it feeds on the buds and seeds of sycamores and alders. Breeds most plentifully in May and June, though fresh eggs may be found from early April to late July. Originally described from Pasadena (Auk xiv, 1897, 397). I noted fresh eggs at Bixby, Los Angeles County, April 6, 1904, and found two nests, each containing four fresh eggs, near Compton, Los Angeles County, July 24, 1910. A. M. Ingersoll informs me that the Willow Goldfinch breeds commonly in certain localities in San Diego County, south to the Mexican line.

249. (530a) **Astragalinus psaltria hesperophilus** Oberholser. GREEN-BACKED GOLDFINCH.

Abundant summer resident of the mesa and foothill regions and up to 3000 feet in the mountain cañons. Less common in the lower country and up to 6400 feet in the mountains. In winter, distributed in flocks over the whole lower country. Breeds most commonly from April to July, but eggs are occasionally found much later. Nests plentifully among the evergreens and shrubbery in parks and gardens. J. Grinnell noted eggs near Pasadena as early as March 22, and took a set of three, slightly incubated, October 21, 1895 (Pub. 2, Pasadena Acad. Sci., 1898, 35).

250. (531) **Astragalinus lawrencei** (Cassin). LAWRENCE GOLDFINCH.

Common summer resident of the mesas and foothills up to 7000 feet in the mountains, occasionally occurring as high as 8500 feet. Rare in winter, the most of the species migrating south, but rather common in early spring. Originally described from specimens taken at Sonoma and San Diego (Proc. Acad. Nat. Sci. Phil. v, 1850, 103). H. S. Swarth found this bird quite abundant at the head of the Arroyo Seco, on the slope of Mt. Strawberry, Los Angeles County, October 19 to 26, 1900. Mr. Swarth also saw a pair near Los Angeles, February 12, 1900, and saw another pair in the same locality, February 23, following. W. O. Emerson noted a small flock in the Volcan Mountains, San Diego County, in late January (Bull. Cal. Acad. Sci. II, 1887, 422). In June, 1907, I found it common at Bear Valley, 6750 feet altitude in the San Bernardino Mountains. Specimens taken showed that they were breeding. Breeds mostly in May, in the lower country. Extreme nesting dates are as follows: Five fresh eggs taken by G. F. Morcom at Los Angeles, April 23, 1892 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 35), and four eggs, incubation begun, taken by W. M. Pierce near Claremont, Los Angeles County, July 5, 1903.

251. (533) **Spinus pinus** (Wilson). PINE SISKIN.

Common summer resident of the mountains above 5000 feet. Irregular visitant to the lower country in migrations and in winter, south to Lower California and Mexico. Noted by J. Grinnell as abundant near Pasadena during February and March, 1892, and in the vicinity of El Monte as late as March 20, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 35). According to

H. S. Swarth it appeared irregularly in small flocks near Los Angeles during the winter of 1898-99, one being seen as late as March 23 (Condor II, 1900, 38). Mr. Swarth also noted a flock of about two dozen birds in the same locality, April 15, 1901 (Condor III, 1901, 66), and saw several more, November 4, the same year. L. H. Miller saw a bird in the Arroyo Seco in Los Angeles city, October 29, 1908. F. Stephens took a pair of Siskins at Santa Ysabel, San Diego County, April 11, 1890. He informs me that the species migrates regularly through San Diego County, principally along the mountain ranges and foothills. I found it common at Bear Valley, San Bernardino Mountains, in June, 1907, but was unable to locate any nests, although birds taken seemed about to breed.

252. ***Passer domesticus*** (Linnaeus). ENGLISH SPARROW.

This little pest arrived in southern California, west of the mountains, about 1904, apparently coming in from the north and the east at about the same time. At the present writing it is probably pretty well distributed over southern California and, judging from its increase as shown in other localities, it is with us to stay. On the north, it was noted by O. W. Howard at Tehachapi in 1903 (Condor VIII, 1906, 157). It was recorded from Newhall, Los Angeles County, by Cooper Club members at the club outing meeting held May 19, 1906. They found a small colony nesting near the railroad station (Condor VIII, 1906, 157). J. S. Appleton saw it at Oxnard, Ventura County, in 1905, and in the Simi Valley in 1907. Bradford Torrey first saw it at Santa Barbara in 1909 (Condor XI, 1909, 208). H. C. Burt reports the birds fairly common around Santa Paula, Ventura County. On June 1, 1910, he found a nest containing four fresh eggs.

At about the same time that the species arrived from the north, it seems to have come in through the Cajon Pass from Victorville and spread out over the San Bernardino Valley. W. L. Holt first noted it at Banning, Riverside County, in 1910. It arrived in Los Angeles about 1907, first being noted at the corner of Eleventh and Main streets. In spite of the efforts of L. H. Miller and other Cooper Club members to exterminate them before they obtained a permanent foothold, they have increased in numbers until they are now quite common in some portions of the city. I saw fully fledged young on one of our city streets, April 25, 1911. F. Stephens and A. M. Ingersoll inform me that it has not yet put in its appearance at San Diego.

253. (536a) ***Calcarius lapponicus alascensis*** Ridgway. ALASKA LONG-SPUR.

One record. F. Stephens took a female near San Diego, October 2, 1909 (Condor XII, 1910, 44). Now no. 6411 collection F. Stephens.

254. (540a) ***Poœcetes gramineus confinis*** Baird. WESTERN VESPER SPARROW.

Common winter visitant to the stubble fields and washes, and on the dry mesa land at the foot of the mountains. Noted by J. Grinnell in the vicinity of Pasadena from September 14 (1897) to March 19 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 36).

255. (540b) **Poœcetes gramineus affinis** G. S. Miller. OREGON VESPER SPARROW.

Common winter visitant, occurring in company with the last species, but more numerous on the damp meadows of the lowlands. Noted by J. Grinnell at Pasadena in the fall as early as September 16 (1895), and by H. A. Gaylord, in the spring as late as April 25 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 36).

256. (542b) **Passerculus sandwichensis alaudinus** Bonaparte. WESTERN SAVANNAH SPARROW.

Abundant winter visitant to the fields and meadows, from the coast to the base of the mountains. Noted by J. Grinnell on San Clemente Island, March 30, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 17), and in the vicinity of Pasadena from September 18 (1897) to May 3 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 36). A. B. Howell took a specimen at Santa Barbara, September 2, 1911.

257. (543) **Passerculus beldingi** Ridgway. BELDING SPARROW.

Abundant resident of the salt marshes along the coast, and on some of the alkali marshes a little distance from the ocean. Breeds mostly in May, but I have seen nearly grown young as early as April 15. Type specimens taken by L. Belding at San Diego in 1884 (Proc. U. S. Nat. Mus. VII, 1885, 516). Formerly bred commonly at Nigger Slough, Los Angeles County, several miles from the coast. I took a set of four slightly incubated eggs in that locality, May 15, 1906. Much less plentiful there at the present time. L. Belding took two partially incubated eggs near San Diego, April 4, 1885 (Land Bds. Pac. Dist., 1890, 144), and H. A. Gaylord took three eggs, advanced in incubation, near Long Beach, Los Angeles County, July 5, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 36).

258. (544) **Passerculus rostratus rostratus** (Cassin). LARGE-BILLED SPARROW.

Common in winter in the salt marshes and along the beaches of southern California, north to Santa Barbara, occasionally straggling up the coast as far as Santa Cruz (Mailliard, Condor VI, 1904, 16). Originally described from San Diego (Proc. Acad. Nat. Sci. Phila. VI, 1852, 184). Frequently seen on wharves and on the streets of beach towns. May be found along our coast from August to late April, but is apparently absent in summer. Has been repeatedly recorded as breeding along the coast of Los Angeles County, but these records are probably all referable to the last species. Although I have made a thorough search of our local salt marshes, I have never been able to find the species in summer, nor has any other ornithologist of late years, though it has been particularly sought for.

A. W. Anthony and A. M. Ingersoll, who have collected extensively in the coast marshes near San Diego, believe that it occasionally nests in that locality. This belief is based on the fact that Mr. Ingersoll in one instance saw a bird in breeding season carrying worms, as he believes, to a nest that

he was unable to locate, and that Mr. Anthony on two or three occasions found families of young that were still fed by their parents, on the beach near Oceanside (Auk XXIII, 1906, 149). The principal breeding grounds of this bird, however, have not been located up to the present time, but are probably on some part of the Lower California coast that has not been thoroughly worked by ornithologists.

C. B. Linton took a female at Alamitos Bay, Los Angeles County, August 18, 1908 (Condor x, 1908, 239), and I saw two birds at Hyperion, Los Angeles County, August 20, 1910. These were probably some of the earliest arrivals, as the species does not become common until September. G. F. Breninger took one bird of a pair seen on San Clemente Island in February, 1903 (Auk XXI, 1904, 223), and A. W. Anthony noted them on the same island in September (Auk XXIII, 1906, 149). J. H. Bowles finds them common in winter around the docks at Santa Barbara (Auk XXVIII, 1911, 174).

259. (546a) **Ammodramus savannarum bimaculatus** Swainson. WESTERN GRASSHOPPER SPARROW.

Fairly common resident, locally, in various parts of southern California, but, owing to its secretive habits, easily overlooked. More widely distributed in winter. Irregular in its breeding habits; may be found nesting commonly in a locality one year and entirely absent the next. H. W. Henshaw recorded it as breeding on the coast near Santa Barbara in 1875 (Ann. Rep. Ch. Eng. U. S. Geol. Surv., 1876, App. JJ, 241), and J. H. Bowles found it a common summer resident of the same locality. During the summer of 1910, he secured a set of five eggs and noted several nests containing young (Condor XIII, 1911, 85). J. S. Appleton finds it a fairly common resident of the Simi Valley, Ventura County. He took four eggs, advanced in incubation, May 11, 1896, and five eggs, half incubated, May 15, the same year. J. E. Law has found it rather common in summer in a section of the San Fernando Valley, Los Angeles County. April 5, 1908, he took an adult female whose oviducts contained a fully formed egg. I noted several pairs of birds, all apparently nesting, in a barley field near Gardena, Los Angeles County, in May and June, 1910. On June 2, I found a nest which contained four nearly full-grown young birds (Condor XII, 1910, 204). During the summer of 1911, I visited this place several times, but failed to find any signs of the birds. L. H. Miller has found young just able to fly at Riverside, and F. O. Johnson took an adult female at Beaumont, Riverside County, April 23, 1889 (Swarth, Condor XII, 1910, 108). L. Belding noted the species near San Diego in spring (Land Bds. Pac. Dist, 1890, 146).

260 (552a) **Chondestes grammacus strigatus** Swainson. WESTERN LARK SPARROW.

Common resident of the foothill and mesa country, rare along the coast. Occasional in summer up to 7000 feet in the mountains. Particularly plentiful in orchards, gardens and parks, where it nests in fruit trees, hedges and shrubbery. Breeds most commonly from the latter part of April through May. W. M. Pierce took four partially incubated eggs near Claremont, Los Angeles

County, April 19, 1903, and H. A. Gaylord took three slightly incubated eggs near Pasadena, July 12, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 37). I found a nest containing young birds at Bear Valley, 6750 feet in the San Bernardino Mountains, June 11, 1907.

261. (553) *Zonotrichia querula* (Nuttall). HARRIS SPARROW.

One record. C. B. Linton took a specimen, the sex of which was not determined, on San Clemente Island, October 15, 1907 (Condor x, 1908, 84). Recently no. 16656 collection J. E. Thayer; now no. 21272, Univ. Calif. Mus. Vert. Zool.

262. (554) *Zonotrichia leucophrys leucophrys* (J. R. Forster). WHITE-CROWNED SPARROW.

According to L. Belding, this species winters entirely south of San Diego, and in the migrations keeps mainly to the mountain ranges, occasionally appearing on the lowlands in the southern part of the state and southward (Land Bds. Pac. Dist., 1890, 148). There is, however, one winter record for southern California, that of an immature female taken by H. W. Marsden in the Volcan Mountains, San Diego County, December 3, 1904 (Bishop, Condor vii, 1905, 142). We have the following records of specimens taken during migrations: Two females by H. S. Swarth near Los Angeles, April 22, 1898, and April 26, 1899 (Bull. Cooper Orn. Club i, 1899, 94). Male, female and immature male, also taken by Mr. Swarth near Los Angeles, April 12, April 19 and March 16, 1900. Male by H. W. Marsden at Witch Creek, San Diego County, April 8, 1904 (Bishop, Condor vii, 1905, 142). Male and female by L. Belding near San Diego, May 3 and 5, 1885 (Land Bds. Pac. Dist., 1890, 148).

263. (554a) *Zonotrichia leucophrys gambeli* (Nuttall). GAMBEL SPARROW.

Abundant in winter all over the mesas and lowlands as well as on the Santa Barbara Islands. Arrives mostly in September and leaves in April. J. Grinnell took a specimen at Pasadena as late as May 3 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 37).

264. (554b) *Zonotrichia leucophrys nuttalli* Ridgway. NUTTALL SPARROW.

Breeds along the coast as far south as Santa Barbara County, and, unlike the two preceding, seems to occur in winter but very little farther south than the southern limit of its breeding range. At this season straggles rarely south to Los Angeles and San Bernardino counties. Breeds commonly on the coast of San Luis Obispo County. I found fresh eggs and fully grown young in that locality in May, 1909 (Condor xi, 1909, 185). J. H. Bowles has found it breeding near Santa Barbara. He noted an old bird feeding young in that vicinity, May 21, 1910 (Auk xxviii, 1911, 174). J. Grinnell informs me that there are two specimens from Los Angeles County in the University of California Museum of Vertebrate Zoology. One of these was taken by H. S. Swarth at Los Angeles, January 13, 1896 (Grinnell, Pub. 2, Pasadena Acad.

Sci., 1898, 37), and the other, an adult female, was taken by W. P. Taylor near Pasadena, January 20, 1906. H. W. Marsden took a male at Redlands, San Bernardino County, January 27, 1903 (Bishop, Condor VII, 1905, 142).

265. (557) **Zonotrichia coronata** (Pallas). GOLDEN-CROWNED SPARROW.

Common winter resident from the lowlands up to 5000 feet on brushy mountain sides, south at least to San Diego. Also occurs on the Santa Barbara Islands. Noted by J. Grinnell at Pasadena from September 26 (1896) to May 9 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 37). A. van Rossem took a specimen near El Monte, Los Angeles County, May 16, 1911. Recorded by L. Belding as a rare winter visitant at San Diego (Land Bds. Pac. Dist., 1890, 153), and noted by W. O. Emerson as tolerably common in the Volcan Mountains in the spring of 1884 (Bull. Cal. Acad. Sci. II, 1887, 423).

266. (558) **Zonotrichia albicollis** (Gmelin). WHITE-THROATED SPARROW.

Rare straggler in winter. Two records, as follows: Immature female taken by H. A. Gaylord near Pasadena, November 21, 1894 (Nidologist III, 1896, 106). Now no. 5051 collection F. S. Daggett. Adult bird taken by W. E. Bryant near Los Angeles, February 25, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 37).

267. (560a) **Spizella passerina arizonae** Coues. WESTERN CHIPPING SPARROW.

Common resident of orchards, gardens and parks, in the foothill and mesa region. Abundant in summer in coniferous forests of the mountains up to 10,000 feet. Resident on some of the Santa Barbara Islands. Breeds mostly in May in the lower country, later in the mountains. I found the species plentiful on Santa Rosa Island, June 7, 1910 (Condor XII, 1910, 171); F. Stephens found it common on Catalina in August, 1886 (Belding, Land Bds. Pac. Dist., 1890, 155), and J. Grinnell saw it on San Clemente in March, 1897, and again in June, the same year (Pub. 1, Pasadena Acad. Sci., 1897, 18). Extreme nesting dates in the foothill region are: three fresh eggs taken by E. Parker near Pasadena, April 19, 1896, and three slightly incubated eggs noted by H. A. Gaylord in the same locality, June 19, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 37).

268. (562) **Spizella breweri** Cassin. BREWER SPARROW.

Common summer resident of the sage brush slopes of the mountains. Most plentiful from 5000 to 7000 feet. Breeds locally down into the foothills. Occurs regularly in spring and fall in favorable localities in the lowlands, but is rare in midwinter. H. S. Swarth has noted this sparrow many times in spring and fall near Los Angeles and in the San Fernando Valley, Los Angeles County. He saw one bird in the latter locality, December 27, 1899 (Condor II, 1900, 91), and J. E. Law took a specimen in the same vicinity, December 27, 1903.

O. W. Howard found the Brewer Sparrow breeding plentifully in the high sage-brush valleys of northeastern Ventura County, in the neighborhood of Mt. Piños, in May and June, 1903. His earliest set was of four slightly incu-

bated eggs taken May 14, and his latest was of three eggs, also slightly incubated, taken June 20. According to J. S. Appleton this bird is a rather common summer resident of the Simi Valley, southern Ventura County. He took five fresh eggs in that locality, May 21, 1899, and three slightly incubated eggs, May 28, following (Condor XIII, 1911, 76). H. S. Swarth found a nest containing three young birds in the San Fernando Valley, Los Angeles County, May 24, 1899 (Bull. Cooper Orn. Club I, 1899, 94). W. M. Pierce took two considerably incubated eggs near Claremont, Los Angeles County, May 13, 1903, and noted four eggs, advanced in incubation, in the same locality, May 28, following. I took a set of four eggs near Highlands, San Bernardino County, April 19, 1897. Incubation was far advanced. Specimens were taken by N. S. Goss at San Diego in the spring of 1884 (Belding, Land Bds. Pac. Dist., 1890, 157).

269. (565) **Spizella atrogularis** (Cabanis). BLACK-CHINNED SPARROW.

Common in summer on brushy mountain sides up to about 7000 feet. Occurs sparingly on the mesas during migrations. Arrives mostly in April and leaves during late August and early September. Extreme records for the species in Los Angeles County are: specimen taken by H. S. Swarth in the Cahuenga Valley, April 1, 1896, and immature male taken by J. Grinnell near Pasadena, September 10, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 38). Although the Black-chinned Sparrow is fairly plentiful in summer in suitable localities, the nest is hard to locate and there are few sets of eggs in collections. J. Grinnell found a nest containing two small young on Mt. Piños, Ventura County, June 28, 1904 (Auk XXII, 1905, 387). O. W. Howard took five sets of eggs in Lockwood Valley and Piru Basin, northeastern Ventura County, in May and June, 1903. His earliest set was of four fresh eggs taken May 16, and his latest was of four slightly incubated eggs taken July 1. J. E. Law found a nest containing almost full-grown young near Newhall, Los Angeles County, May 19, 1906 (Condor VIII, 1906, 157). A. B. Howell took four slightly incubated eggs in the Arroyo Seco, near Pasadena, May 21, 1911. F. E. Blaisdell found three nests at Poway, San Diego County, in April and May. One nest contained four eggs and the other two contained young birds (Belding, Land Bds. Pac. Dist., 1890, 158). A nest and three eggs was taken by C. L. Pauter at Escondido, San Diego County, June 12, 1905 (Sharp, Condor IX, 1907, 89).

270. (567) **Junco hyemalis hyemalis** (Linnaeus). SLATE-COLORED JUNCO.

Winter visitant in small numbers. W. A. Jeffries took a specimen at Santa Barbara, March 14, 1883 (Auk VI, 1889, 221). F. S. Daggett took two males near Pasadena, March 15, 1893, and March 4, 1897. J. Grinnell took a female in the same locality, February 27, 1897. H. S. Swarth took a male near Los Angeles, February 8, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 38). Mr. Swarth also took two males near Los Angeles, November 3, 1898 (Bull. Cooper Orn. Club I, 1899, 95), and a male on Mt. Wilson, December 6, 1900 (Condor III, 1901, 17). W. W. Price took two males at Riverside, February 10 and December 1, 1888 (Emerson, Zoe I, 1890, 45), and L. Beld-

ing took a specimen thirty miles east of San Diego, January 24, 1884 (Land Bds. Pac. Dist., 1890, 159).

271. (567c) ***Junco hyemalis thurberi*** Anthony. THURBER JUNCO.

Abundant summer resident of the Transition and Boreal zones in the mountains mostly above 5000 feet. Common in winter in the lower country, generally appearing in October and remaining until April. Described from specimens taken by E. C. Thurber on Mt. Wilson, Los Angeles County, May 24, 1890 (Zoe 1, 1890, 238). C. B. Linton saw a bird of this species on San Nicolas Island, March 31, 1910. Fully fledged young may be found in the mountains as early as the middle of June, and J. Grinnell has found fresh eggs as late as July 27 (1905) (Univ. Calif. Publ. Zool. v, 1908, 95), so probably two broods are reared in a season. Antonin Jay took three eggs advanced in incubation in the Arroyo Seco above Pasadena, July 3, 1904.

272. (570b) ***Junco phaeonotus caniceps*** (Woodhouse). GRAY-HEADED JUNCO.

Occasional winter visitant. W. B. Judson took a female near Pasadena, October 26, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 38). Now no. 378 collection H. S. Swarth. Mr. Judson also saw a bird of this species on Mt. Wilson, January 23, 1900. From November 18 to December 3, 1906, several of these birds were noted by A. P. Smith at Julian, San Diego County, at an altitude of 4100 feet (Condor ix, 1907, 199).

273. (573a) ***Amphispiza bilineata deserticola*** Ridgway. DESERT SPARROW.

Occasional in winter, north to Los Angeles County. H. S. Swarth took a male near San Fernando, Los Angeles County, April 23, 1898, and F. S. Daggett took an immature male in the San Fernando Valley, September 12, 1903 (Condor vi, 1904, 24). Mr. Swarth also noted a bird in the San Fernando Valley, October 30, 1903, and saw one on a lawn in Los Angeles, January 16, the same year. J. Grinnell took an adult male near Pasadena, April 10, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 39).

274. (574) ***Amphispiza belli*** (Cassin). BELL SPARROW.

Common resident of the brush covered washes and mesas of the interior, also on several of the Santa Barbara Islands. Breeds mostly in May and early June. Originally described from specimens taken at Sonoma and San Diego (Proc. Acad. Nat. Sci. Phila. v. 1850, 103). According to J. S. Appleton, the Bell Sparrow is a common breeding bird in the Simi Valley, Ventura County. W. M. Pierce has found it breeding plentifully near Claremont, Los Angeles County. His earliest and latest nesting records for that locality are, respectively, four eggs, incubation begun, taken April 6, 1905, and four fresh eggs noted June 25, 1903. I found it nesting abundantly near Colton, San Bernardino County, in June, 1906, and took several sets of eggs. C. S. Sharp regards it as a rare breeder in the vicinity of Escondido, San Diego County (Condor ix, 1907, 89). It is recorded by L. Belding as a common resident at San Diego, and by F. E. Blaisdell at Poway (Land Bds. Pac. Dist., 1890, 161). I noted it on Santa Rosa

Island in June, 1910, and C. B. Linton has taken many specimens on San Clemente. J. G. Cooper found it on San Nicolas and San Clemente (Proc. Cal. Acad. Sci. IV, 1869, 78), and O. W. Howard took several sets of eggs on the latter island during the first week in March, 1903.

275. (574.1) **Amphispiza nevadensis nevadensis** (Ridgway). SAGE SPARROW.

Occasional winter visitant. H. S. Swarth says of a series of twenty-eight Sage Sparrows taken by F. O. Johnson near Riverside during the months of November, December and January: "The specimens in this series show every degree of variation from a few individuals typical of *canescens* to others indistinguishable from true *nevadensis*. Though the majority of the specimens are probably to be referred to *nevadensis*, they have mostly smaller bills than examples of that form from northern Nevada. In the matter of wing lengths there are some that might be referred with equal propriety to either race, being variously intermediate between the dimensions of the two forms as given by Grinnell (Condor VII, 1905, 181)" (Condor XII, 1910, 108).

276. (574.1b) **Amphispiza nevadensis canescens** Grinnell. CALIFORNIA SAGE SPARROW.

Summer resident of the elevated Upper Sonoran and Transition sage valleys of the southern Sierras, south to the Sierra San Gabriel, Los Angeles County. Slightly migratory to lower levels in winter, south at least to Riverside County. In describing this subspecies, Mr. Grinnell examined specimens from Cuddy Cañon, southern Kern County; near Tejon Pass; valleys in immediate vicinity of Mt. Piños, Ventura County; near Pine Flats, head of Tujunga Cañon, Sierra San Gabriel, Los Angeles County; San Fernando Valley, Los Angeles County (winter); Whitewater, Riverside County (winter) (Condor VII, 1905, 181). Specimens were also taken at Riverside in winter by F. O. Johnson (Swarth, Condor XII, 1910, 108). O. W. Howard found this bird breeding rather plentifully in Piru Basin, 5500 feet altitude, northeastern Ventura County, in May and June, 1903. He took four slightly incubated eggs May 16, and five, slightly incubated, June 6.

277. (580) **Aimophila ruficeps ruficeps** (Cassin). RUFOUS-CROWNED SPARROW.

Fairly common resident of the foothill regions, also on some of the Santa Barbara Islands. Partial to grass covered hillsides where it breeds mostly in April and May. Owing to its retiring habits, its nest is seldom found and the eggs are among the rarest in oological collections of this region. A nest containing three eggs was found and photographed by Harriet Williams Myers near Los Angeles, April 10, 1909 (Condor XI, 1909, 131). W. L. Chambers took four slightly incubated eggs near Santa Monica, Los Angeles County, May 17, 1903, and Antonin Jay took four eggs, advanced in incubation, near Whittier, April 17, 1910. L. P. Williams took four fresh eggs near Redlands, San Bernardino County, April 20, 1893, and took several other sets during the four years following (Osprey II, 1897, 27). C. S. Sharp found a nest containing two young and

two pipped eggs near Escondido, San Diego County, March 11, 1900 (Condor ix, 1907, 89). N. K. Carpenter took three slightly incubated eggs in the same locality, June 2, 1907, and saw a set of four eggs that was taken near San Diego, May 13, 1906 (Condor ix, 1907, 158). C. B. Linton and myself found the species fairly common on Santa Cruz Island in November and December, 1907 (Condor x, 1908, 128), and J. G. Cooper noted it on Catalina (Proc. Cal. Acad. Sci., iv, 1869, 78).

278. (581e) *Melospiza melodia morphna* Oberholser. RUSTY SONG SPARROW.

One record, that of an adult female taken by F. O. Johnson at Riverside, November 3, 1888. Now no. 11324 collection University of California Museum of Vertebrate Zoology. H. S. Swarth says of this specimen: "Though the locality is extraordinary, this specimen is so exactly like an example of *M. m. morphna* at hand from Seattle, Washington, that I have no choice but to refer it to that form" (Condor xii, 1910, 108).

279. (581h) *Melospiza melodia graminea* C. H. Townsend. SANTA BARBARA SONG SPARROW.

Abundant resident on Santa Barbara Island, less plentiful on Santa Cruz. Type taken by Mr. Townsend on Santa Barbara Island, February 13, 1890 (Proc. U. S. Nat. Mus. xiii, 1890, 139). In May, 1897, J. Grinnell found this species the most abundant land bird on Santa Barbara Island. Thirty-one specimens were secured and sets of eggs were taken as follows: May 14, five eggs, incubation begun; four eggs, fresh, and four eggs, incubation advanced. May 15, three eggs, slightly incubated, and three eggs, incubation advanced (Pub. 1, Pasadena Acad. Sci., 1897, 6). In June, 1911, I found it very abundant on Santa Barbara Island and noted a nest on June 16 which contained two eggs advanced in incubation. At this time most of the young birds were full grown. I noted the species on Santa Cruz Island in November and December, 1907 (Condor x, 1908, 128), but found it much less plentiful than on Santa Barbara.

280. (581i) *Melospiza melodia clementae* C. H. Townsend. SAN CLEMENTE SONG SPARROW.

Resident on San Clemente, Santa Rosa and San Miguel islands. Type taken by Mr. Townsend on San Clemente, January 25, 1890 (Proc. U. S. Nat. Mus. xiii, 1890, 139). In June, 1910, I found this bird very common among the low bushes on San Miguel Island. A nest containing one fresh egg was found by O. W. Howard on June 15. This was probably a second laying as fully fledged young were plentiful at the time. C. B. Linton found four nests of this species on San Clemente Island, March 31, 1907. One nest held four young about a week old and the others contained incomplete sets.

281. (581n) *Melospiza melodia cooperi* Ridgway. SAN DIEGO SONG SPARROW.

Abundant resident of the lowlands and, in summer, up to 5000 feet in the mountain cañons. Breeds mostly in April and early May along streams and wherever vegetation is luxurious. H. J. Lelande took three fresh eggs near San

Gabriel, Los Angeles County, February 28, 1897, and I found several sets of fresh eggs near Bixby, June 9, 1912.

282. (583) **Melospiza lincolni lincolni** (Audubon). LINCOLN SPARROW.

Breeds in the Boreal zone in the mountains, mostly from 7000 to 9000 feet altitude, south to the San Jacinto Range. Common winter visitant to the lowlands where it is generally found in the brush in the vicinity of water courses. At this season it occurs south to Lower California and Mexico. Breeds mostly in May. Noted by H. S. Swarth near Los Angeles as early as September 18 (1897), and by J. Grinnell at Pasadena as late as May 3 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 39). Northward migration at San Diego noted by J. G. Cooper about March 25 (Land Bds. Cal., 1870, 216), and L. Belding took a male in the same locality, April 26, 1884 (Land Bds. Pac. Dist., 1890, 167). J. Grinnell took one bird and saw another, on San Clemente Island, March 30, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 19).

About the middle of June, 1907, I found several nests of this bird near Bluff Lake, 7500 feet altitude in the San Bernardino Mountains. At this date the nests contained nearly grown young, so that the eggs must have been laid early in May. J. Grinnell informs me that the Lincoln Sparrow breeds in appropriate localities on San Jacinto Peak.

283. (583a) **Melospiza lincolni striata** Brewster. FORBUSH SPARROW.

Occasional in winter. C. B. Linton took three specimens near Long Beach, Los Angeles County, February 12, 1908 (Condor x, 1908, 182). Two of these specimens, both females, are nos. 16657 and 16658 collection J. E. Thayer.

284. (585) **Passerella iliaca iliaca** (Merrem). FOX SPARROW.

Occasional winter visitant. Specimens taken as follows: Male by J. H. Bowles at Santa Barbara, January 1, 1911 (Auk xxviii, 1911, 175). Unsexed specimen by J. E. Law in the San Fernando Valley, Los Angeles County, March 22, 1908, and female by A. B. Howell in the same locality, November 11, 1911 (Condor xiv, 1912, 41). Male by A. van Rossem at Pasadena, December 13, 1907. Male by A. M. Ingersoll near San Diego, January 3, 1888 (Bryant, Proc. Cal. Acad. Sci., ser. 2, ii, 1889, 90).

285. (585a) **Passerella iliaca unalaschcensis** (Gmelin). SHUMAGIN FOX SPARROW.

Occasional in winter, south at least to Los Angeles County and San Clemente Island. J. Grinnell took a female on Wilson's Peak, Los Angeles County, December 12, 1896. A. van Rossem took an adult male at Pasadena, February 4, 1910, and J. E. Law took a specimen at Pomona, December 25, 1901. C. B. Linton took a female on San Clemente Island, November 30, 1908 (Condor xi, 1909, 194).

J. Grinnell has recently described a new race of fox sparrow from the Prince William Sound region, Alaska, giving it the name of *Passerella iliaca sinuosa*. He states that this form is nearest to *P. i. unalaschcensis*, but differs from it in smaller and slenderer bill, in larger and heavier spotting beneath and much slatier tone of coloration throughout (Univ. Calif. Publ. Zool. v, 1910,

405, 406). J. H. Bowles took several specimens at Santa Barbara during the winter of 1910-11 which he considers referable to this new race (Auk XXVIII, 1911, 175).

286. (585b) *Passerella iliaca megarhyncha* Baird. THICK-BILLED FOX SPARROW.

Common winter visitant on brushy mountain sides and along water courses of the lower country. Also on the Santa Barbara Islands. Noted by J. Grinnell at Pasadena from October 10 (1896) to April 17 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 39). I took an adult female on Santa Cruz Island, November 24, 1907, and A. van Rossem took a pair on Catalina Island, February 15, 1910.

287. (585c) *Passerella iliaca schistacea* Baird. SLATE-COLORED FOX SPARROW.

Occasional winter visitant. Specimens taken as follows: Female by H. S. Swarth at Los Angeles, December 14, 1896 (Condor II, 1900, 39). Female, also by Mr. Swarth, in Millard's Cañon, near Pasadena, February 11, 1901 (Condor III, 1901, 66). Eight specimens by H. W. Marsden near Witch Creek, San Diego County, in December, 1904 (Bishop, Condor VII, 1905, 142). One specimen by F. E. Blaisdell at Poway, San Diego County, April 19 (Belding, Land Bds. Pac. Dist., 1890, 171).

288. (585d) *Passerella iliaca stephensi* Anthony. STEPHENS FOX SPARROW.

Common in summer on the higher mountains, from the San Jacinto Range north to the Sierras of southern Tulare County. More widely distributed in winter, at which season it occurs north to Marin County and, probably, south to Lower California, although, as yet, no specimens are recorded from the latter locality. Type specimens taken by A. W. Anthony in the San Jacinto Mountains, July 14, 1895 (Auk XII, 1895, 348).

Found by J. Grinnell in summer of 1911 on the west side of the Sierras in Tulare County (Mailliard, Condor XIV, 1912, 66), and in summer of 1904 on Mt. Piños, Ventura County, and its westward spur, Sawmill Mountain. A half-grown fledgling was taken June 29 (Auk XXII, 1905, 388). Mr. Grinnell also found young just able to fly at Dry Lake, 9000 feet altitude in the San Bernardino Mountains, June 22, 1905 (Univ. Calif. Publ. Zool. V, 1908, 99). He failed, however, to find the nest, and I had the same experience at Bear Valley and Bluff Lake, San Bernardino Mountains, although I found the birds very common in these localities in June, 1907. They seemed to be principally confined to the patches of low, thorny bushes known as "mountain misery," and were plentiful above 7000 feet, mostly on north slopes.

There have been very few specimens of this bird taken in southern California in winter. In fact, the only winter record for the coast district at the present time is of two birds taken on Catalina Island and now in the U. S. National Museum. Specimens were taken by E. S. Spaulding on Little Pine Mountain, one of the higher peaks in the hills of Santa Barbara County, at

an elevation of nearly 3000 feet, August 30, 1910 (Bowles, Auk xxviii, 1911, 175). These birds had probably bred at higher elevations and descended to the lower level after the young had been raised. J. Mailliard has found the Stephens Fox Sparrow to occur in winter at an elevation of about 1500 feet in the mountains of Marin County, and has taken specimens in that locality as early as the first part of September (Condor xiv, 1912, 63). This fact would seem to show that this species is one of the few land birds that winter in considerable numbers north of the northern limit of their breeding range.

289. (585f) ***Passerella iliaca insularis*** Ridgway. KADIAK FOX SPARROW.

Common winter visitant to the foothills and mesa lands, south to San Diego County. Fairly plentiful on the Santa Barbara Islands. C. B. Linton and myself found this bird not uncommon on Santa Cruz Island in November and December, 1907. Mr. Linton also took several specimens on San Clemente Island, between January 23 and April 1, 1907 (Condor x, 1908, 85).

290. (588b) ***Pipilo maculatus oregonus*** Bell. OREGON TOWHEE.

According to the A. O. U. *Check-List*, this species winters south to southern California. I have seen but one record for this locality, that of a female taken by C. B. Linton on San Clemente Island, December 4, 1908 (Condor xi, 1909, 194). Recently no. 16662 collection John E. Thayer; now no. 21273, Univ. Calif. Mus. Vert. Zool.

291. (588c) ***Pipilo maculatus clementae*** Grinnell. SAN CLEMENTE TOWHEE.

Common resident on San Clemente, Santa Catalina, Santa Cruz and Santa Rosa islands. Originally described from San Clemente (Auk xiv, 1897, 294). I have included this form solely because it has been accepted by the A. O. U. Committee. Although I have examined a great many specimens from the islands, I have never been able to discern any appreciable difference between it and the next. R. M. Perez took three sets of eggs on Catalina Island, April 13-16, 1911. They were all advanced in incubation.

292. (588d) ***Pipilo maculatus megalonyx*** Baird. SAN DIEGO TOWHEE.

Abundant resident of brushy regions, occurring in summer up to 7000 feet in the mountains. Nests mostly in May in the lower country and about a month later in the mountains. Antonin Jay found two fresh eggs near El Monte, Los Angeles County, April 11, 1897, and W. M. Pierce found two fresh eggs near Claremont, Los Angeles County, July 22, 1906.

293. (591.1a) ***Pipilo crissalis senicula*** Anthony. ANTHONY TOWHEE.

Abundant resident of the mesa and foothill regions, less common on the lowlands near the coast. May be found in summer up to about 5000 feet in the mountains. Breeds mostly in April and May. J. Grinnell found a brood of nearly fledged young in Pasadena, March 20, 1896, and noted fresh eggs in the same locality, late in July (Pub. 2, Pasadena Acad. Sci., 1898, 40). These dates are both exceptional.

294. (592.1) ***Oreospiza chlorura*** (Audubon). GREEN-TAILED TOWHEE.

Summer resident of the mountains from 5000 to 9000 feet altitude.

Occurs occasionally along the base of the mountains during migrations. Winters in small numbers at least as far north as San Bernardino. Breeds mostly in May. H. A. Gaylord took a specimen near Pasadena, April 4, 1896, and took another in the same locality, April 29, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 40). H. W. Marsden took a male at Witch Creek, San Diego County, September 25, 1909. During the winter of 1895-6, H. E. Wilder found a number of these birds near San Bernardino. Specimens were taken in January and February (Thurber, Auk XIII, 1896, 265). I found several nests of this bird at Bear Valley, 6750 feet in the San Bernardino Mountains, during June, 1907. They all contained young except one found on June 15, which held three addled eggs.

295. (596) **Zamelodia melanocephala** (Swainson). BLACK-HEADED GROS-BEAK.

Common summer resident of the lowlands and, locally, up to over 6000 feet in the mountain cañons. Arrives in late March and early April, and leaves in September. Eggs are generally deposited during late May and early June. J. Grinnell has noted the species at Pasadena from March 30 (1896) to September 22 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 40). H. Robertson saw a bird near Los Angeles, March 17, 1900. Extreme nesting dates are: Three eggs taken by H. Robertson near Los Angeles, April 28, 1897, and three eggs, incubation commenced, taken by Antonin Jay near Rivera, Los Angeles County, July 8, 1906.

296. (597a) **Guiraca caerulea lazula** (Lesson). WESTERN BLUE GROS-BEAK.

Tolerably common summer resident of the mesas and the willow-bordered streams and ponds of the lower country. Much less plentiful than formerly. Arrives in April and leaves mostly in September. Breeds most commonly in the latter part of May. J. Mailliard took two males on Santa Cruz Island, April 29, 1898 (Bull. Cooper Orn. Club I, 1899, 44). J. E. Law took four slightly incubated eggs in the San Fernando Valley, Los Angeles County, May 11, 1907, and Antonin Jay took two eggs, incubation commenced, near Los Angeles, July 4, 1897.

J. Grinnell has recently given the name of *Guiraca caerulea salicarius* to our local form of blue grosbeak (Proc. Biol. Soc. Wash. XXIV, 1911, 163). This subspecies has not yet been acted upon by the A. O. U. Committee.

297. (599) **Passerina amoena** (Say). LAZULI BUNTING.

Common summer resident from the brush-covered mesas and foothills up to 7000 feet in the mountain cañons. Breeds mostly in May and early June. J. Grinnell has noted the species in the vicinity of Pasadena from April 4 (1896) to September 17 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 41). H. S. Swarth took an immature male near Los Angeles, September 18, 1899. Extreme nesting dates are: Three eggs, fresh, taken by E. D. Parker near Pasadena, April 30, 1895 (Grinnell, l. c.), and three slightly incubated eggs taken by A. I. McCormick near Los Angeles, June 23, 1895 (Avifauna I, 1895, 5).

298. (605) ***Calamospiza melanocorys*** Stejneger. LARK BUNTING.

Irregular visitant, mostly in winter and spring. J. Mailliard saw three birds at Santa Barbara, July 20, 1905 (Condor VII, 1905, 143). E. Simmons took an adult male at Newhall, Los Angeles County, May 3, 1897, and saw three others at the same time (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 41). H. S. Swarth took a female in the San Fernando Valley, Los Angeles County, December 13, 1901, and took a male in the same locality, January 16, 1902. Between that time and February 11, following, he saw several of the birds (Condor IV, 1902, 95). F. O. Johnson took an adult male near Riverside, February 23, 1888, and took three adult males in the same locality, April 21, following (Swarth, Condor XII, 1910, 108). H. E. Wilder has seen the species several times near Riverside. It was noted at Poway, San Diego County, by F. E. Blaisdell, May 25, 1886, and at El Cajon by N. S. Goss, May 16, 1884 (Belding, Land Bds. Pac. Dist., 1890, 180). L. Belding saw a flock of thirty or forty birds near National City, May 6, 1884, and took three males from a flock of about a dozen birds near San Diego, April 1, 1885. Mr. Belding also noted flocks in the latter locality, April 16 and 30, 1885 (Land Bds. Pac. Dist., 1890, 180). G. Holterhoff found Lark Buntings common near National City from the middle of April through May, 1884 (Auk I, 1884, 293).

299. (607) ***Piranga ludoviciana*** (Wilson). WESTERN TANAGER.

Common summer resident of the mountain cañons and coniferous forests. Most plentiful from 1500 to 8000 feet altitude. Breeds mostly in June. During the spring migration, appears numerous, but irregularly, on the mesas and lowlands, feeding in orchards and grain fields. I saw a bird at Nigger Slough, Los Angeles County, May 3, 1911. J. Grinnell records the extreme dates of arrival and departure in the vicinity of Pasadena as April 19 (1896) and September 30 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 41). J. H. Bowles reports seeing Tanagers all through the summer of 1910 in the dense live oaks in the small cañons back of Santa Barbara. He believes that they were undoubtedly breeding, although no nests were found (Auk XXVIII, 1911, 176). J. R. Pemberton found them common in summer in the Santa Ynez Mountains, Ventura County (Condor XII, 1910, 18). I found them plentiful in the San Bernardino Mountains during the summer of 1907. They were nest building the first week in June. Extreme nesting dates are: Three eggs, fresh, taken by R. Arnold in a cañon north of Pasadena, May 5, 1895 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 41), and three eggs, incubation advanced, taken by Antonin Jay in the same locality July 3, 1904.

300. (610a) ***Piranga rubra cooperi*** Ridgway. COOPER TANAGER.

Rare straggler. According to C. P. Streater, a specimen was secured at Santa Barbara by Mr. Dodge in the spring of 1885 (Orn. & Ool. XI, 1886, 52). A female, now no 16660 collection J. E. Thayer, was taken by H. Linton on San Clemente Island, October 11, 1907 (C. B. Linton, Condor X, 1908, 85).

301. (611a) ***Progne subis hesperia*** Brewster. WESTERN MARTIN.

Fairly common summer resident, locally, mostly in timbered regions of the

mountains and higher foothills. Of late years, seems to be increasing in numbers in the lowland towns, nesting in crevices in buildings. Leaves mostly in September and arrives in late March and the month of April. Several seen by H. S. Swarth at Long Beach, Los Angeles County, March 24, 1904. Recorded by B. W. Evermann as a moderately common summer resident of Ventura County (Auk III, 1886, 183), and found breeding at Santa Paula, Ventura County, by H. C. Burt. P. I. Osburn reports several pairs nesting yearly in crevices in the Hotel Maryland in Pasadena. This colony numbered about thirty pairs in 1909 (Condor XI, 1909, 208). Two sets, of five eggs each, were taken by R. M. Perez and G. K. Snyder from under the eaves of a school house in Los Angeles, June 2 and 17, 1910 (Condor XII, 1910, 133). J. Dixon took four fresh eggs at San Onofre, San Diego County, May 30, 1904, and noted several other pairs of birds in the same locality (Condor VIII, 1906, 95). C. S. Sharp found a pair breeding at Escondido (Condor IX, 1907, 89).

302. (612) **Petrochelidon lunifrons lunifrons** (Say). CLIFF SWALLOW.

Abundant summer resident from the lowlands up to 7500 feet in the mountains. Breeds, ordinarily, from April to July, at least two broods being raised in a season. Earliest in the spring in Los Angeles County noted by W. M. Pierce in San Antonio Cañon, February 15, 1904. Latest in the fall noted by J. Grinnell at Long Beach, September 7, 1895 (Pub. 2, Pasadena Acad. Sci. 1898, 41). Sometimes remains considerably later, however, as E. Davis found a nest containing three fresh eggs on the coast of Orange County, September 1, 1894 (Nidologist II, 1894, 30). J. G. Cooper noted the species at San Diego from March 15 to October 5 (1862) (Lands Bds. Cal., 1870, 105). I observed them nest building on a barn near Compton, Los Angeles County, March 26, 1910, and found them nesting abundantly on the trunks of pine trees at Bear Valley, San Bernardino Mountains, in June, 1907.

303. (613) **Hirundo erythrogastra** Boddaert. BARN SWALLOW.

Common over the lowlands and foothill country during migrations, which occur mostly in April and September. A few remain through the summer and nest under bridges or in caves along the coast and on the Santa Barbara Islands. Antonin Jay took two sets, of four eggs each, near Santa Monica, Los Angeles County, June 12, 1898.

304. (614) **Iridoprocne bicolor** (Vieillot). TREE SWALLOW.

Common in spring and summer in the willow regions of the lowlands. The majority migrate south in the fall, but a few remain through the winter. They become numerous in the spring about the middle of March and breed, ordinarily, from the latter part of April through May. Extreme nesting records are: Four eggs, fresh, taken by H. J. Lelande near El Monte, Los Angeles County, April 15, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 42), and four eggs, fresh, taken by Antonin Jay near Santa Monica, July 4, 1903.

305. (615) **Tachycineta thalassina lepida** Mearns. NORTHERN VIOLET-GREEN SWALLOW.

Common summer resident of the Transition zone in the mountains and,

locally, in the oak regions of the mesas. Plentiful over the lower country during migrations. Breeds from late May through June. Noted by J. Grinnell at Pasadena from February 16 (1895) to October 20 (1894) (Pub. 2, Pasadena Acad. Sci., 1898, 42). Although this species is principally confined to the mountains during the breeding season, H. C. Burt reports it a fairly common resident of the foothills near Santa Paula, Ventura County; and I have found it breeding commonly in the oak regions of Santa Barbara County and in the San Jacinto Valley, Riverside County. H. Robertson took four eggs in Millard's Cañon, near Pasadena, June 10, 1902.

306. (616) **Riparia riparia** (Linnaeus). BANK SWALLOW.

Common summer resident in suitable localities in the lowlands. Arrives mostly in March and leaves in September. Breeds mainly in June and early July. Antonin Jay took four eggs, incubation advanced, near Huntington Beach, Orange County, May 27, 1906, and I took four sets of fresh eggs near Whittier, Los Angeles County, July 4, 1894.

307. (617) **Stelgidopteryx serripennis** (Audubon). ROUGH-WINGED SWALLOW.

Fairly common summer resident of the foothill and mesa regions. Most numerous during migrations in March and April and in October. Breeds mostly in May. H. C. Burt took six eggs near Santa Paula, Ventura County, May 5, 1910, and H. A. Gaylord took four fresh eggs near Pasadena, May 30, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 42). On May 14, 1906, I noted two pairs of these birds nesting in crevices in a large-retaining wall in the central part of Los Angeles.

308. (619) **Bombycilla cedrorum** Vieillot. CEDAR WAXWING.

Common, but irregular, winter visitant. At times, usually during the spring months, is abundant, feeding in flocks on the berries of the pepper trees and on the buds of the willows in the lower country. Noted by J. Grinnell in the vicinity of Pasadena from September 14 (1897) to May 17 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 42). One bird seen by Mr. Grinnell on San Clemente Island, May 31, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 19). Small flock seen by H. S. Swarth near Los Angeles, August 31, 1900; and a pair seen by H. J. Lelande near South Pasadena, June 16, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 42). Several birds seen by C. H. Danielson near San Diego, May 14, 1884, and noted by F. E. Blaisdell in the Poway Valley, San Diego County, as late as May 18 (Belding, Land Bds. Pac. Dist., 1890, 195).

309. (620) **Phainopepla nitens** (Swainson). PHAINOPEPLA.

Common summer resident of the Lower Sonoran zone of the mesas, dry washes and cañons of the foothill region. The majority go south in October and return in April, but a few winter at least as far north as Ventura County. Breeds mostly in June. J. G. Cooper took a specimen in the Cajon Pass, San Bernardino County, December 7, 1860 (Am. Nat. III, 1870, 185), and, according to E. C. Thurber, a small flock passed the winter of 1895-6 in the Santa

Ana River bottom near San Bernardino (Auk xiii, 1896, 265). L. H. Miller saw a male at Riverside, December 2, 1911. H. S. Swarth has noted Phainopeplas in Westlake Park, Los Angeles, on several occasions in mid-winter and saw one bird near Los Angeles, March 12, 1899. J. S. Appleton has noted the species on several occasions during the winter months in the Simi Valley, Ventura County. I saw a bird in this locality, February 25, 1912, and the following day I took a male in the same vicinity. Its testes were much enlarged and it would undoubtedly have bred within a short time. Extreme nesting dates for Los Angeles County are: Two slightly incubated eggs taken by H. A. Gaylord near Pasadena, May 4, 1897, and two fresh eggs taken by Mr. Gaylord in the same locality, July 28, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 43). J. S. Appleton took a set of eggs in the Simi Valley, Ventura County, in late March.

310. (622b) **Lanius ludovicianus gambeli** Ridgway. CALIFORNIA SHRIKE.

Abundant resident from the coast to the base of the mountains. Breeds mostly from late March to the latter part of May. Extreme nesting dates are: Five eggs, fresh, taken by H. J. Lelande near Pasadena, February 14, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 43), and four eggs, incubation advanced, taken by W. M. Pierce near Claremont, Los Angeles County, July 5, 1903.

The shrikes that occur along the southeastern border of the coastal slope of southern California are variously intermediate between this form and *L. l. excubitorides*, some specimens approaching the latter very closely.

311. (622c) **Lanius ludovicianus anthonyi** Mearns. ISLAND SHRIKE.

This insular form, described from specimens taken by R. H. Beck on Santa Cruz Island in May, 1897 (Auk xv, 1898, 261), is a fairly common resident on Santa Cruz Island where it is found mostly around the ranch houses and cultivated lands. It is resident on San Clemente Island but is less plentiful than on Santa Cruz. It is found on Santa Rosa Island but I have no information as to its abundance. One bird was seen there by H. J. Lelande and O. W. Howard, June 8, 1910. H. Robertson and V. W. Owen saw a pair of these birds and found a nest containing young, on Anacapa Island, June 4, 1899, but when I visited this island in June, 1910, none were seen. It is resident on Catalina Island in small numbers.

R. H. Beck took four sets of eggs on Santa Cruz Island, May 6 to 11, 1897 (Mearns, Auk xv, 1898, 264), and J. Mailliard took two sets of eggs and found several nests in course of construction on the same island in late April, 1898 (Bull. Cooper Orn. Club. i, 1899, 41). C. B. Linton noted the following nests on San Clemente Island in March, 1907. One downy young and two infertile eggs, March 8; five eggs, two-thirds incubated, March 7; and five eggs, fresh, March 19 (Condor x, 1908, 85). J. Grinnell took five slightly incubated eggs on the same island, April 2, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 19). R. M. Perez took five fresh eggs on Catalina Island, April 15, 1911.

312 (627a) **Vireosylva gilva swainsoni** (Baird). WESTERN WARBLING VIREO.

Common summer resident, locally, from the base of the mountains up to about 8500 feet in the cañons. Common migrant over the lower country. Breeds mostly in May and June. J. Grinnell has noted this bird near Pasadena as early as March 23 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 43), and H. S. Swarth took a female near Los Angeles, October 4, 1901. H. A. Gaylord took three slightly incubated eggs near Pasadena, May 9, 1894, and J. Grinnell took three fresh eggs on Pine Flats, 6000 feet altitude in the San Gabriel Range, July 2, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 43). F. E. Blaisdell took a nest and eggs at Poway, San Diego County, June 11, 1883 (Belding, Land Bds. Pac. Dist., 1890, 199).

313. (629a) **Lanivireo solitarius cassinii** (Xantus). CASSIN VIREO.

Common along the foothills and on the mesas during migrations, which occur in April and in late September and early October. Breeds numerously in the mountain cañons from the foothills up to about 7000 feet, nesting in cottonwoods and white oaks in May and June. Noted by H. S. Swarth migrating near Los Angeles, the first in the spring, April 3 (1901), the last in the fall, October 13 (1898). Found common in summer by J. R. Pemberton in Matilija Cañon, Rincon Creek and other localities in the coast range of Ventura County (Condor XII, 1910, 18). Extreme nesting records by J. Grinnell are: Five eggs, incubation advanced, taken near Pasadena, May 11, 1895, and three eggs, incubation slight, taken in the same locality, June 26, 1893 (Pub. 2, Pasadena Acad. Sci., 1898, 44).

314. (632) **Vireo huttoni huttoni** Cassin. HUTTON VIREO.

Common resident of the foothill and mesa regions, also the larger islands of the Santa Barbara group. Fairly plentiful over the lower country in winter. Breeds, ordinarily, from early April through May. Extreme nesting records are: Three eggs, fresh, taken by J. Grinnell near Pasadena, March 7, 1896 (Pub. 2, Pasadena Acad. Sci., 1898, 44), and four eggs, fresh, taken by H. A. Gaylord in the same locality, July 15, 1894 (Avifauna I, 1895, 27).

315. (633a) **Vireo belli pusillus** Coues. LEAST VIREO.

Common in summer in the willow regions from the coast to the foothills. Arrives in late March and early April and leaves mostly during the latter part of August. Breeds generally in the latter part of May. Noted by H. Robertson near Los Angeles as early as March 11 (1900), and by J. Grinnell at Pasadena as late as September 8 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 44). Extreme nesting records by H. Robertson near Los Angeles are: Three newly hatched young found April 1, 1900, and set of three eggs taken June 20, 1898.

316. (634) **Vireo vicinior** Coues. GRAY VIREO.

Fairly common summer resident of the foothills from San Diego County north along the San Jacinto and San Bernardino ranges to Cajon Pass, San Bernardino County. Found by F. Stephens to be not uncommon in the Cajon Pass, June 4 and 5, and July 1, 1886. A nest found on June 4 contained four slightly incubated eggs. The nest was built in the chaparral about four feet from the ground (Morcom, Bull. Ridg. Orn. Club. No. 2, 1887, 51). Mr. Stephens also took a nest and four eggs about ten miles east of Riverside, April 26, 1889

(Auk VII, 1890, 159). Mr. Stephens states that the species is not uncommon in summer at Campo and Julian, San Diego County, from the lower limit of pines down to about 3000 feet altitude. In 1876 he noted its first appearance at Campo about March 24 (Bull. Nutt. Orn. Club III, 1878, 42).

317. (636) **Mniotilta varia** (Linnaeus). BLACK AND WHITE WARBLER.

One record, that of an immature female taken by H. A. Gaylord in the Arroyo Seco, near Pasadena, October 2, 1895 (Nidologist III, 1896, 106). Now no. 5022 collection F. S. Daggett.

318. (645a) **Vermivora rubricapilla gutturalis** (Ridgway). CALAVERAS WARBLER.

Common spring and fall migrant from the lowlands up to at least 9800 feet in the mountains. Noted by J. Grinnell in spring in the vicinity of Pasadena as early as April 4 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 44), and found by H. S. Swarth to be fairly common near Los Angeles May 3 to 7 and May 12, 1900. Also noted by Mr. Swarth near Los Angeles in the fall from September 13 (1897) to October 8 (1896) (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 44). According to J. Grinnell, this species makes its appearance in the San Bernardino Mountains, in the fall, during the latter part of August. The first noted were at Cactus Flat, 6000 feet, August 17, 1905. They were common among the tamarack pines on the summit of Sugarloaf, 9800 feet, August 19, and at Bluff Lake, 7500 feet, from August 30 to September 3, the species was fairly common in the willow thickets (Univ. Calif. Publ. Zool. v, 1908, 110).

319. (646) **Vermivora celata celata** (Say). ORANGE-CROWNED WARBLER.

Probably a regular migrant in small numbers. Most common in the fall. Occasional in winter as far north as Riverside. Specimens taken as follows: Male by J. Grinnell at Pasadena, September 3, 1896 (Swarth, Condor III, 1901, 145). Several specimens by H. S. Swarth near Los Angeles, in the fall from September 17 (1900) to October 30 (1899) (Condor III, 1901, 17). Two females by J. E. Law in the San Fernando Valley, Los Angeles County, April 15 and 22, 1905, and a female by H. W. Marsden at Witch Creek, San Diego County, April 24, 1909. One winter record, that of a male taken by F. O. Johnson at Riverside, December 25, 1888 (Swarth, Condor XII, 1910, 108).

320. (646a) **Vermivora celata lutescens** (Ridgway). LUTESCENT WARBLER.

Common spring and fall migrant from the coast to at least 9800 feet in the mountains. A few remain through the summer and breed in the cañons and on brushy mountain sides. Migrations occur mainly in September and March. According to W. Brewster, winters as far north as San Diego (Bull. Mus. Comp. Zool. Harv. Coll. XLI, 1902, 179). May occasionally winter even farther north, as H. S. Swarth took a specimen near Los Angeles, November 20, 1901, and took several in the same locality, February 21, 1904. J. H. Bowles records it as a common summer resident near Santa Barbara. He has found it nesting not more than two miles from the ocean and at an elevation of less than 400 feet (Auk XXVIII, 1911, 177). J. E. Law took four half-incubated eggs near Lankershim.

Los Angeles County, April 23, 1905, and in April, 1902, I found it breeding commonly in a cañon near Monrovia, the same county. I took three slightly incubated eggs April 27, and another set of three, also slightly incubated, April 29. I have been unable to find it nesting in this locality since 1902, although I have searched for it on several occasions, so it is probably irregular in its nesting localities.

321. (646b) *Vermivora celata sordida* (C. H. Townsend). DUSKY WARBLER.

Common summer resident on the larger islands of the Santa Barbara group and on the mainland coast in the vicinity of San Diego. A few winter on the islands but the majority migrate to the mainland, where they may be found from the middle of July until April, in the willow thickets of the lowlands and the oak regions of the mesas. The type of this sub-species was taken by C. H. Townsend on San Clemente Island, January 25, 1890 (Proc. U. S. Nat. Mus. XIII, 1890, 139). It is most abundant on the islands of Santa Catalina, San Clemente and Santa Cruz. On the latter island, C. B. Linton and myself found it fairly common in November and December, 1907.

O. W. Howard found several nests containing eggs and young on Catalina Island in April and May, 1905 (Warbler, ser. 2, II, 1906, 9), and R. M. Perez took several sets on the same island in late April, 1911. Mr. Howard also took four slightly incubated eggs on Santa Cruz Island, April 27, 1906, and H. J. Lelande took four slightly incubated eggs on Anacapa Island, April 6, the same year. A. M. Ingersoll informs me that the Dusky Warbler breeds plentifully at Point Loma and Coronado Beach, near San Diego. He has found at least a dozen nests in these localities, all of which were within a mile of the salt water.

322. (647) *Vermivora peregrina* (Wilson). TENNESSEE WARBLER.

One record, that of an immature female taken by J. Grinnell in the Arroyo Seco, near Pasadena, September 27, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 45). Now no. 3177 collection J. Grinnell.

323. (652b) *Dendroica aestiva rubiginosa* (Pallas). ♂ ALASKA YELLOW WARBLER.

Occasional in migrations. E. A. Mearns took three specimens at Mountain Springs, San Diego County, May 11, 1894 (Oberholser, Auk XIV, 1897, 78). This locality is on the desert side of the mountains, about half way up the eastern slope. H. W. Marsden took specimens at Witch Creek, San Diego County, during 1904, as follows: Female, May 3; male, May 6; male, May 11, and male, October 12 (Bishop, Condor VII, 1905, 143). Now nos. 10901, 10902, 10903, 11811 collection L. B. Bishop.

324. (652c) *Dendroica aestiva brewsteri* Grinnell. CALIFORNIA YELLOW WARBLER.

Common summer resident in wooded localities, especially along streams, from the lowlands up to at least 5200 feet in the mountain cañons. Occurs at much higher altitudes during the fall migration. Breeds mostly in late May and early June. Noted by H. S. Swarth near Los Angeles from April 1 (1899) to October 14 (1901). Extreme nesting dates are: Four eggs, fresh, taken by

Antonin Jay near Compton, Los Angeles County, May 5, 1895, and three eggs, fresh, taken by J. Grinnell near Pasadena, June 26, 1893 (Pub. 2, Pasadena Acad. Sci., 1898, 44).

325. (655) ***Dendroica coronata*** (Linnaeus). MYRTLE WARBLER.

Common winter visitant. South at least to Los Angeles County and San Clemente Island. Noted by H. S. Swarth in the vicinity of Los Angeles, from November 13 (1896) to March 1 (1901). J. Grinnell took an adult female on Santa Barbara Island, May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 7), and C. B. Linton found the species fairly common in winter on San Clemente (Condor XI, 1909, 194).

326. (656) ***Dendroica auduboni auduboni*** (J. K. Townsend). AUDUBON WARBLER.

Summer resident from 4000 to more than 10,000 feet altitude in the mountains. Breeds mostly in June. Very abundant and generally distributed throughout the lowlands in winter. Appears in the lower country about the first week in September and remains well into April. J. Grinnell found a nest containing three eggs at about 4000 feet altitude in the San Bernardino Mountains, June 21, 1905, and took four fresh eggs at Dry Lake, 9000 feet altitude, June 14, 1906 (Univ. Calif. Publ. Zool. v, 1908, 112-114).

327. (657) ***Dendroica magnolia*** (Wilson). MAGNOLIA WARBLER.

Rare migrant. Male taken by J. Grinnell on Santa-Barbara Island, May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 7). Immature female taken by H. S. Swarth near Los Angeles, October 21, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 45), and another immature female, taken by Mr. Swarth in the same locality, October 5, 1901 (Condor III, 1901, 145). So far as I know, these are our only records.

328. (665) ***Dendroica nigrescens*** (J. K. Townsend). BLACK-THROATED GRAY WARBLER.

Common summer resident of the mountains, from the foothills up to at least 6000 feet. Occurs in considerable numbers on the mesas and lowlands during migrations. Spring migration, late March and the month of April; fall migration, late September and the month of October. Earliest in the spring in Los Angeles County: male taken by J. Grinnell near Pasadena, March 23, 1895 (Pub. 2, Pasadena Acad. Sci., 1898, 46). Latest in the fall: female taken by H. S. Swarth near Los Angeles, October 30, 1899 (Condor II, 1900, 91). J. G. Cooper noted the species in spring migration at San Diego, April 20, 1862 (Land Bds. Cal., 1870, 91), and L. Belding took a male in the same locality, May 3, 1885 (Land Bds. Pac. Dist., 1890, 212). In June, 1909, J. R. Pemberton saw this bird frequently along Rincon Creek, Ventura County, from Stanley Park, elevation 400 feet, to the summit of the Santa Ynez Mountains, 4900 feet. A nest containing young was found at the summit on June 23 (Condor XII, 1910, 18). Extreme nesting records are: Nest containing three small young, noted by J. Grinnell in the mountains north of Pasadena, May 19, 1895; and three eggs, considerably incubated, taken by R. Arnold in the same locality, June 26, 1896 (Pub. 2, Pasadena Acad. Sci., 1898, 46).

329. (668) **Dendroica townsendi** (J. K. Townsend). TOWNSEND WARBLER.

Fairly common migrant, occasionally remaining through the winter. Spring migration, April and early May; fall migration, October and early November. H. S. Swarth has noted the species frequently during migrations in the vicinity of Los Angeles. He took a male in the Arroyo Seco, near Pasadena, as late as May 18 (1899). He also took a female in Santa Monica Cañon, Los Angeles County, December 21, 1900, and another female in the Cahuenga Hills, February 14, 1902. J. Grinnell found the birds fairly common near Pasadena from April 22 to May 13, 1897, and took one specimen in the same locality, October 7, 1895. He also saw several birds on Mt. Wilson, December 12, 1896, and took a specimen in that locality, January 27, 1894 (Pub. 2, Pasadena Acad. Sci., 1898, 46). W. P. Taylor found it common at Pasadena during January, 1909 (Condor xi, 1909, 69).

F. O. Johnson took a specimen at Riverside, December 31, 1888 (Swarth, Condor xii, 1910, 108). N. S. Goss noted it at Julian, San Diego County, April 17, 1884, and L. Belding took a male near San Diego, April 20, the same year (Land Bds. Pac. Dist., 1890, 213). F. Stephens found it in small numbers at Campo, San Diego County, April 27, 1877 (Bull. Nutt. Orn. Club viii, 1883, 188), and, according to J. G. Cooper, small flocks arrived at San Diego about April 20, 1862 (Land Bds. Cal., 1870, 92). J. Grinnell and H. A. Gaylord took two females on Santa Barbara Island, May 15, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 7), and C. B. Linton took a specimen on San Clemente in December, 1908 (Condor xi, 1909, 194).

330. (669) **Dendroica occidentalis** (J. K. Townsend). HERMIT WARBLER.

Fairly common migrant, though irregularly so. Most plentiful in spring. Noted by J. Grinnell at Pasadena from April 22 to May 17, and one bird seen by H. S. Swarth near Los Angeles, September 10, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 46). Mr. Swarth has also noted it in the spring near Los Angeles from April 17 (1904) to May 16 (1900). He also saw one or two birds on Mt. Wilson, May 20, 1898. G. F. Morcom took a female near Redondo, Los Angeles County, May 10, 1901. J. Grinnell took an adult male at Bluff Lake, 7500 feet altitude in the San Bernardino Mountains, September 3, 1905 (Univ. Calif. Publ. Zool. v, 1908, 115), and H. E. Wilder saw a flock at Little Bear Valley in late July, 1910. It was noted commonly in migration at Campo, San Diego County, by F. Stephens, April 27, 1877 (Bull. Nutt. Orn. Club. viii, 1883, 188). N. S. Goss found it plentiful at Julian, San Diego County, April 25, 1884, and L. Belding saw three or four birds at Tia Juana, on the Mexican boundary, April 30 and May 2, 1885 (Land Bds. Pac. Dist., 1890, 215). During the last week in April, 1872, J. G. Cooper found it quite common in company with the two preceding species, in the Cuyamaca Mountains, San Diego County, between 1500 and 4000 feet altitude (Baird, Br. & Ridg., N. Am. Land Bds. iii, 1874, 506). H. A. Gaylord took a female on Santa Barbara Island, May 14, 1897, and saw several more the same day (Grinnell, Pub. 1, Pasadena Acad. Sci., 1897, 7).

331. (675a) **Seiurus noveboracensis notabilis** Ridgway. GRINNELL WATER-THRUSH.

Rare migrant. So far noted only in the fall, as follows: Bird of the year taken by J. Grinnell at Cactus Flat, 6000 feet altitude on the desert slope of the San Bernardino Mountains, August 16, 1905 (Condor ix, 1907, 60). Now no. 7157 collection J. Grinnell. Female taken by C. B. Linton near National City, San Diego County, September 29, 1906 (Condor ix, 1907, 60). Now no. 16661 collection J. E. Thayer. Specimen picked up dead under an electric light mast in the business section of San Diego, September 11, 1887, and presented to the late Walter Bryant by A. M. Ingersoll (Keeler, Zoe I, 1891, 371).

332. (680) **Oporornis tolmiei** (J. K. Townsend). MACGILLIVRAY WARBLER.

Common migrant from the foothills to at least 8500 feet in the mountains. Occasional to the lower country, mostly during the fall migration. Noted in spring in the vicinity of Pasadena by J. Grinnell as early as April 4 (1896), and by H. A. Gaylord as late as May 13 (1896). Noted in the fall by H. S. Swarth near Los Angeles from September 4 (1897) (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 46) to October 24 (1899) (Condor ii, 1900, 91). Mr. Swarth also saw a female near Los Angeles, June 4, 1898, and J. E. Law took a male near Pomona, May 22, 1901. J. Grinnell found the species common in the San Bernardino Mountains, from 7500 to 8500 feet altitude, from August 19 to September 3, 1905 (Univ. Calif. Publ. Zool. v, 1908, 116). F. E. Blaisdell noted it in spring at Poway, San Diego County, from March 28 (1885) to the middle of May (1884) (Belding, Land Bds. Pac. Dist., 1890, 216).

333. (681c) **Geothlypis trichas arizela** Oberholser. PACIFIC YELLOW-THROAT.

Common resident of the marshes and damp meadow lands, from the coast to the base of the mountains. Breeds mainly in April and May. Extreme nesting dates are: Four eggs, fresh, taken by H. J. Lelande near Pasadena, April 7, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 46), and three eggs, fresh, taken by Antonin Jay at Nigger Slough, Los Angeles County, July 9, 1905.

334. (683a) **Icteria virens longicauda** Lawrence. LONG-TAILED CHAT.

Common summer resident in the willow regions of the lowlands. Occurs in small numbers along the foothills during migrations. Arrives in April and leaves mostly in September. Breeds most plentifully in late May and early June. W. M. Pierce saw this species in San Antonio Cañon, Los Angeles County, April 1, 1900, and H. S. Swarth took an immature female at Los Angeles, October 7, 1897. Extreme nesting records are: Three eggs taken by H. Robertson near Los Angeles, May 4, 1898, and three eggs, also taken by Mr. Robertson, in the same locality, June 25, the same year.

335. (685a) **Wilsonia pusilla pileolata** (Pallas). PILEOLATED WARBLER.

Occasional in migrations. The following specimens of this form, all taken at Pasadena, are in the collection of F. S. Daggett: Male taken April 29, 1897; female taken May 1, 1896, and female taken September 22, 1896 (Grinnell, Condor v, 1903, 80). J. Grinnell took five specimens on Santa Barbara Island, May 14-16, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 8).

336. (685b) **Wilsonia pusilla chryseola** Ridgway. GOLDEN PILEOLATED WARBLER.

Abundant summer resident from the lowlands to at least 8500 feet in the mountains. Rare in winter. Breeds commonly in the willow regions in May, later in the mountains. Noted by J. Grinnell near El Monte, Los Angeles County, from February 16 (1895) to October 27 (1894) (Pub. 2, Pasadena Acad. Sci., 1898, 47). H. S. Swarth saw a bird near Los Angeles, at least once a week from November 11, 1899, until the end of February, 1900 (Condor II, 1900, 31). J. Grinnell found the species common and apparently breeding, in willow thickets at the head of the south fork of the Santa Ana River, 8000 to 8500 feet altitude in the San Bernardino Mountains, June 27 to 30, 1905 (Univ. Calif. Publ. Zool. v, 1908, 34). Extreme nesting dates in the lower country are as follows: Four eggs, fresh, taken by Antonin Jay near El Monte, Los Angeles County, April 21, 1907, and three eggs, incubation slight, taken by J. J. Schneider near Anaheim, Orange County, July 2, 1899 (Condor II, 1900, 34).

337. (687) **Setophaga ruticilla** (Linnaeus). REDSTART.

One record, that of a female found dead near Pasadena by P. I. Osburn, December 27, 1905 (Condor XI, 1909, 102).

338. (697) **Anthus rubescens** (Tunstall). PIPIT.

Abundant winter visitant. Often seen in large flocks on ploughed fields and pasture lands. Noted by J. Grinnell near Pasadena as early as August 29 (1895) (Pub. 2, Pasadena Acad. Sci., 1898, 47), and by L. Belding at San Diego as late as April 23 (1884) (Land Bds. Pac. Dist., 1890, 223). One bird seen by H. S. Swarth at Los Angeles, May 1, 1899 (Condor II, 1900, 40).

339. (701) **Cinclus mexicanus unicolor** Bonaparte. DIPPER.

Breeds along mountain streams from 2000 to 9000 feet altitude. In winter follows the streams down as low as the foothills. Breeds mostly in late April and the first part of May. According to L. Belding does not occur in San Diego County, owing to the absence of suitable streams. R. Arnold took four slightly incubated eggs in Eaton Cañon, north of Pasadena, April 22, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 47). In June, 1907, I found this bird common along Bear Creek and other streams in the San Bernardino Mountains. Several nests were examined, all of which contained young birds.

340. (702) **Oreoscoptes montanus** (J. K. Townsend). SAGE THRASHER.

Breeds in some of the high mountain valleys in northeastern Ventura County. In winter descends to the brushy foothills and mesas, south at least to San Diego. Eggs are generally deposited in May. One specimen taken by B. W. Evermann near Ventura, March 12, 1881 (Auk III, 1886, 185). Noted by H. S. Swarth fairly commonly in the San Fernando Valley, Los Angeles County, from January 20 (1902) to April 18 (1900), and particularly numerous January 25, 1899 (Condor II, 1900, 89), and February 11 and 20, 1902. Found by H. J. Lelande to be very plentiful on brushy hillsides near Perris, Riverside County, January 11, 1910. Five specimens, now in the University

of California Museum of Vertebrate Zoology, were taken by F. O. Johnson at Riverside, in January and February (Swarth, Condor XII, 1910, 108). L. Belding took two specimens near San Diego in May, 1881 (Evermann, Auk III, 1886, 185), and Bradford Torrey saw a bird in a San Diego park, February 3-16, 1908 (Condor XI, 1909, 174). O. W. Howard found about a dozen nests of this bird at an elevation of about 5000 feet, in Lockwood Valley, Ventura County, near Mt. Piños, during the month of May, 1903. Two sets, of five eggs each, and two sets of six eggs each, were taken May 13 and 14.

341. (703a) **Mimus polyglottos leucopterus** (Vigors). WESTERN MOCKINGBIRD.

Common resident from the coast to the base of the mountains, also on the larger Santa Barbara Islands. Breeds mostly during the latter part of April and the month of May. Extreme nesting records are: Three eggs, fresh, taken by Antonin Jay at Los Angeles, March 31, 1895, and three eggs, incubation advanced, also taken by Mr. Jay, near Monrovia, Los Angeles County, June 23, 1904.

This is one bird with which civilization seems to agree. It is apparently much more plentiful at the present time than it was when the country was less settled. It is partial to orchards and parks and the ornamental trees along the streets of cities and towns.

342. (710) **Toxostoma redivivum** (Gambel). CALIFORNIA THRASHER.

Common resident of brushy localities from the lowlands up to about 6000 feet in the mountains. Most abundant in the foothill and mesa regions. Breeds mainly in March and April, but sets are occasionally taken much earlier. J. Grinnell took three eggs, incubation begun, near Azusa, Los Angeles County, December 15, 1899 (Condor II, 1900, 19). H. J. Lelande took two considerably incubated eggs near Pasadena, January 27, 1897, and H. A. Gaylord took three fresh eggs in the same locality, June 26, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 47).

343. (711) **Toxostoma lecontei lecontei** Lawrence. LECONTE THRASHER.

A desert species, occasionally found west of the mountains. According to M. F. Gilman, the Leconte Thrasher is a regular resident in small numbers as far west as Banning, Riverside County. In that vicinity he has noted nests containing eggs from February 17 (1899) until June, most commonly in late March and early April (Condor VI, 1904, 95-98). F. Stephens saw a bird near Julian, San Diego County, late in August, 1911.

344. (713) **Heleodytes brunneicapillus couesi** (Sharpe). CACTUS WREN.

Common resident, locally, on cactus covered mesas and washes, north to Ventura County. Much less plentiful in winter than in summer. Breeds mostly in April and May. Reported by B. W. Evermann, in the early 80's, as a common resident of Ventura County, wherever cactus was abundant (Auk III, 1886, 185). H. C. Burt took a set of eggs near Santa Paula in 1905, but has been unable to find the species there since that time. J. S. Appleton finds it a common resident of the Simi Valley, southern Ventura County. Extreme nest-

ing records are as follows: Five eggs, fresh, taken by H. J. Lelande in the San Fernando Valley, Los Angeles County, March 13, 1897 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 48), and four eggs, incubation commenced, taken by Antonin Jay near Monrovia, Los Angeles County, July 9, 1904.

345. (713a) **Heleodytes brunneicapillus bryanti** Anthony. BRYANT CACTUS WREN.

According to F. Stephens, the habitat of this form is central and northern Lower California. On examination of a large series of cactus wrens taken by A. W. Anthony in southern and Lower California, he found that there were more specimens of *couesi* taken south of the Mexican line than there were of *bryanti* taken north of it. There were, however, two specimens, a male and female from San Diego, which he assigned to this race (Condor VI, 1904, 51).

346. (715) **Salpinctes obsoletus obsoletus** (Say). ROCK WREN.

Common resident in suitable localities from the coast to the summits of the highest mountains. Also resident on all the Santa Barbara Islands except San Nicolas. Breeds mostly in April in the lower country, later in the mountains. Noted by J. Grinnell at the extreme summit of San Gorgonio Peak, over 11,000 feet altitude, in the San Bernardino Mountains, June 18, 1905 (Univ. Calif. Publ. Zool. v, 1908, 118). O. W. Howard took several sets of eggs on Catalina Island, April 1, 1905, and took seven slightly incubated eggs on Anacapa Island, April 30, 1906. Antonin Jay took five fresh eggs near Whittier, Los Angeles County, May 7, 1902.

347. (715a) **Salpinctes obsoletus pulverius** Grinnell. SAN NICOLAS ROCK WREN.

Confined to San Nicolas Island, where it is a common resident. Described by J. Grinnell in Auk xv, 1898, 238-9. On comparing my series of specimens taken on San Nicolas Island with others from the mainland and the other islands of the Santa Barbara group, I must confess that I have been unable to discern any appreciable difference between them. C. B. Linton noted a pair of these birds carrying nesting material into a crack under the eaves of a store house on San Nicolas Island, April 14 and 15, 1911 (Condor XIII, 1911, 109). On the 9th of June, following, I visited this nest accompanied by Mr. Linton. On removing some shingles from the roof of the house, we found that the nest contained four young birds, about half grown. On June 24, 1911, Mr. Linton found a nest in a cavity in a sandstone boulder, containing four eggs on the point of hatching (Auk XXVIII, 1911, 489). On the same day I found a nest in a crevice in a sandstone cliff, which contained one fresh egg. These were probably second layings, as full-grown young were plentiful all over the island at this date.

348. (717b) **Catherpes mexicanus punctulatus** Ridgway. DOTTED CANYON WREN.

Tolerably common resident from the foothills up to about 7000 feet in the mountains, south to Lower California. Most plentiful in the Upper Sonoran zone. Breeds generally from the latter part of April through May. L. B.

Bishop has several specimens taken by H. W. Marsden at Witch Creek, San Diego County, in winter, and L. Belding noted the species in Mission Cañon, near San Diego, in the 80's (Land Bds. Pac. Dist., 1890, 230). C. B. Linton took a male on Santa Cruz Island, December 19, 1907 (Condor x, 1908, 128). L. Peyton found a nest containing three young, near Sespe, Ventura County, June 10, 1910. H. Robertson took a set of six eggs near Los Angeles, April 16, 1900, and J. Grinnell took six fresh eggs in the Arroyo Seco, near Pasadena, June 23, 1893 (Pub. 2, Pasadena Acad. Sci., 1898, 48).

349. (719d) **Thryomanes bewicki charienturus** Oberholser. SAN DIEGO WREN.

Common resident of the foothill oak region and brushy mountain sides up to about 6000 feet. The majority descend to the lower country in winter, where they may be found commonly on brush and grass lands. Breeds most plentifully in April and May. Extreme nesting dates by W. M. Pierce near Claremont, Los Angeles County, are: Six eggs, incubation slight, taken March 9, 1905, and six eggs, partly incubated, taken June 20, 1903. A nest containing young was noted by Florence Merriam Bailey in an old nose bag hanging in a shed at Twin Oaks, San Diego County, April 18, 1889 (Auk XIII, 1896, 121).

350. (719.1) **Thryomanes leucophrys** (Anthony). SAN CLEMENTE WREN.

Common resident of San Clemente Island. Type specimen taken by A. W. Anthony, August 27, 1894 (Auk XII, 1895, 51). The bird found on Santa Cruz and Santa Rosa islands has been given the name of *Thryomanes bewicki nesophilus* by H. C. Oberholser (Proc. U. S. Nat. Mus. XXI, 1898, 442), and J. Grinnell has named the Catalina Island bird *Thryomanes bewicki catalinae* (Univ. Calif. Publ. Zool. v, 1910, 308). None of these three island forms differs from the mainland bird to any great extent.

351. (721a) **Troglodytes aëdon parkmani** Audubon. WESTERN HOUSE WREN.

Common summer resident from the coast up to over 5000 feet in the mountain cañons, ascending to over 8000 feet during the fall migrations (Grinnell, Univ. Calif. Publ. Zool. v, 1908, 120). A few remain through the winter in the lowlands, but the majority winter to the south of us. Breeds mostly in May in wooded localities and, occasionally, in holes in banks. Extreme nesting dates are: Eight eggs, fresh, taken by J. Grinnell near Pasadena, April 20, 1895 (Pub. 2, Pasadena Acad. Sci., 1898, 48), and six eggs, half incubated, taken by the writer at Seven Oaks, 5200 feet altitude in the San Bernardino Mountains, June 10, 1906.

352. (722a) **Nannus hiemalis pacificus** (Baird). WESTERN WINTER WREN.

Winter visitant to the mountains, occasional to the foothills and valleys. South at least to Pasadena and Pomona. Three birds seen by J. H. Bowles near Santa Barbara, November 27, 1910. One specimen secured (Condor XIII, 1911, 35). Three or more birds noted by J. G. Cooper near Saticoy, Ventura

County, in winter. One specimen secured (Auk iv, 1887, 93). One specimen taken by L. H. Miller in the San Fernando Valley, Los Angeles County, November 25, 1911, and two specimens taken by J. E. Law in San Dimas Cañon, near Pomona, January 20, 1901. Noted by J. Grinnell in the Arroyo Seco and Millard's Cañon, near Pasadena, as early as October 23 (1897) and as late as January 25 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 48). A number of birds seen by H. S. Swarth in the Arroyo Seco, October 18 to 26, 1900, and two birds seen by Mr. Swarth on Mt. Wilson, December 5, following. Female taken by C. B. Linton on Santa Cruz Island, October 23, 1908.

353. (725a) **Telmatodytes palustris paludicola** (Baird). TULE WREN.

Common resident of swampy regions in the lowlands, south to San Diego County. More widely distributed in winter, at which time it occurs plentifully in weed patches and among the rank grass of the meadows. Breeds most commonly in May. Found nesting near Riverside by F. Stephens in 1878, and recorded by C. S. Sharp as a common breeding bird at San Luis Rey, San Diego County (Condor ix, 1907, 91). A. M. Ingersoll has noted it in early spring at Linda Lake, twenty-one miles east of San Diego. This is the most southern record I have seen. I took six slightly incubated eggs at Bixby, Los Angeles County, April 15, 1904, and noted two fresh eggs in the same locality, July 2, 1906.

354. (725c) **Telmatodytes palustris plesius** (Oberholser). WESTERN MARSH WREN.

Occurs in winter. Regularity and abundance of its occurrence not fully determined, as yet. Specimens recorded as follows: Taken by F. S. Daggett: one specimen at Long Beach, Los Angeles County, February 21, 1896; two specimens, December 26, 1895, and one specimen, January 22, 1896, at Bixby, Los Angeles County. Taken by J. Grinnell: one specimen, December 27, 1895, at Bixby; two specimens, November 7, 1896, at El Monte, Los Angeles County (Condor v, 1903, 134).

355. (726d) **Certhia familiaris zelotes** Osgood. SIERRA CREEPER.

Common resident of the coniferous forests of the mountains, from 4000 to 9000 feet altitude, south to the San Jacinto Range. Occasional to the foothills in winter. J. H. Bowles took a specimen at Santa Barbara, January 5, 1911 (Auk xxviii, 1911, 177), and J. E. Law has noted it in the foothills near Hollywood, Los Angeles County, in winter. J. Grinnell found it moderately common in June, 1904, on Mt. Piños, Ventura County, from 7000 feet altitude to the summit (Auk xxii, 1905, 391). In the San Bernardino Mountains, Mr. Grinnell found no nests with eggs later than June 11, but young were found, yet unable to fly, as late as July 20. Two sets taken June 11, were of four and five eggs (Condor ix, 1907, 59).

356. (727a) **Sitta carolinensis aculeata** Cassin. SLENDER-BILLED NUTHATCH.

Common resident of coniferous forests of the mountains from 4000 to at least 9400 feet. Occasional to the foothills in fall, winter and spring. One

specimen taken by F. S. Daggett near Pasadena, August 26, 1896 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 49). Noted by F. E. Blaisdell at Poway, San Diego County, in January, and by L. Belding at Campo and Escondido, in January, and in Santa Margarita Cañon, in April (Land Bds. Pac. Dist., 1890, 236). Seen in the Volcan Mountains, San Diego County, by W. O. Emerson. By March 1, it was mated and seemed about to breed (Bull. Cal. Acad. Sci. II, 1887, 424). Found by J. Grinnell to be rather common around Dry Lake, 9400 feet altitude in the San Bernardino Mountains, in June and July. Several nests containing young were found (Univ. Calif. Publ. Zool. v, 1908, 123).

357. (728) **Sitta canadensis** Linnaeus. RED-BREASTED NUTHATCH.

Resident in limited numbers on the higher mountains, south to San Geronio Peak; also on the pine timbered hills of Santa Cruz Island. Occasional visitant to the lower country in fall and spring. Winters south to Lower California. One bird seen by H. Robertson near San Pedro, Los Angeles County, September 8, 1898. Noted by H. S. Swarth as common near Los Angeles from September 16 to about the middle of October, the same year. One specimen secured September 16 and another a few days later (Bull. Cooper Orn. Club I, 1899, 95). Male taken by Mr. Swarth on Mt. Wilson, May 21, 1898. Found by J. Grinnell to be one of the rarest birds in the San Bernardino Mountains. "Their peculiar nasal call note was heard at Dry Lake (9000 feet), June 21, 1905; on the north side of San Bernardino Peak at 7500 feet, July 12, and on several occasions during July at Bluff Lake (7500 feet). On September 2, a single specimen was shot from a tall pine at the latter place" (Univ. Calif. Publ. Zool. v, 1908, 123). A. B. Howell and A. van Rossem found this bird fairly common in the pine timber on Santa Cruz Island from April 24 to May 2, 1911. About two dozen birds were seen and six taken. One bird was watched for half an hour while she was preparing a nesting site (Condor XIII, 1911, 210). C. B. Linton took three specimens on Santa Cruz Island, October 3, 4, 1908.

358. (730) **Sitta pygmaea pygmaea** Vigors. PYGMY NUTHATCH.

Common resident of coniferous forests above 4000 feet. Occasional to the foothills and mesas in winter. One bird seen by H. E. Wilder at Riverside in October, 1898. Noted by F. E. Blaisdell several times during January at Poway, San Diego County (Belding, Land Bds. Pac. Dist., 1890, 238). I found several nests containing young in the San Bernardino Mountains in June, 1906, and J. Grinnell took seven slightly incubated eggs at an elevation of 7000 feet in the same mountains, June 12, 1906 (Univ. Calif. Publ. Zool. v, 1908, 123).

359. (733) **Baeolophus inornatus inornatus** (Gambel). PLAIN TITMOUSE.

Common resident from the oak covered foothills up to about 6000 feet in the mountains. More widely distributed in winter. Breeds mainly in April. Extreme nesting dates are: Four eggs, fresh, taken by H. J. Lelande at Arcadia, Los Angeles County, March 3, 1897, and six eggs, slightly incubated, taken by J. Grinnell near Pasadena, May 12, 1894 (Pub. 2, Pasadena Acad. Sci., 1898, 49). I found a nest containing newly hatched young at Seven Oaks, 5200 feet in the San Bernardino Mountains, June 10, 1906, and W. O. Emerson noted the birds

mated and singing by March 2, in the Volcan Mountains, San Diego County (Bull. Cal. Acad. Sci. II, 1887, 424).

360. (738a) **Penthestes gambeli baileyae** (Grinnell). BAILEY MOUNTAIN CHICKADEE.

Common resident of the coniferous forests of the mountains from 5000 feet to as high as 10,600 feet (Grinnell, Univ. Calif. Pub. Zool. v, 1908, 124). Occasional to the oak regions of the foothills and mesas in winter. Noted by H. S. Swarth as rather common in winter near Switzer's Camp in the Arroyo Seco. Several birds seen by J. E. Law in the Calabasas Hills, Los Angeles County, September 15, 1911, and a male taken by Mr. Law in the city of Pomona, March 6, 1901. Several birds seen and one specimen taken, by F. E. Blaisdell at Poway, San Diego County, February 15, and noted by W. O. Emerson in the Volcan Mountains on February 24 and occasionally afterwards (Belding, Land Bds. Pac. Dist., 1890, 241). I found it breeding plentifully at Bear Valley, 6750 feet in the San Bernardino Mountains, in June, 1907. Several nests were examined, all of which contained young. J. Grinnell took five slightly incubated eggs in the San Bernardino Mountains, June 15, 1906 (Univ. Calif. Publ. Zool. v, 1908, 124).

361. (742a) **Chamaea fasciata henshawi** Ridgway. PALLID WREN-TIT.

Common resident from the willow thickets of the lowlands up to about 7000 feet on brushy mountain sides. Breeds in the lower country mostly in April and May, later at higher altitudes. Extreme nesting dates are: Two sets of fresh eggs taken by N. S. Goss near San Diego, March 16, 1884 (Belding, Land Bds. Pac. Dist., 1890, 242), and four considerably incubated eggs taken by J. Grinnell near Pasadena, June 25, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 50).

362. (743a) **Psaltiriparus minimus californicus** Ridgway. CALIFORNIA BUSH-TIT.

Abundant resident from the willow thickets of the lowlands up to more than 5000 feet in the mountains. Occurs as high as 7500 feet after the close of the breeding season. Common in winter on the Santa Barbara Islands. Breeds mostly in April and May. Extreme nesting dates are: Four eggs, fresh, taken by C. E. Groesbeck near Pasadena, March 7, 1896, and seven eggs, fresh, taken by H. A. Gaylord in the same locality, July 18, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 50).

363. (748a) **Regulus satrapa olivaceus** Baird. WESTERN GOLDEN-CROWNED KINGLET.

Fairly common fall and winter visitant to the mountains, south at least to the San Bernardino Range. Occasionally straggles to the mesas. J. Grinnell took two specimens in Santa Ana Cañon, San Bernardino Mountains, at an altitude of 5500 feet, August 19, 1907 (Univ. Calif. Publ. Zool. v, 1908, 126). Mr. Grinnell also took specimens on Mt. Wilson, Los Angeles County, October 31, 1896, and observed others in the same locality, October 30, 1897 (Pub. 2, Pasadena Acad. Sci., 1898, 50). H. S. Swarth found it fairly common in the Arroyo Seco, above Pasadena, October 19 to 26, 1900, and saw several flocks in San Antonio Cañon, October 18, 1903. He has several specimens taken on Mt. Wil-

son during the winter months, and one female that he shot from a pepper tree in Los Angeles, November 4, 1901. J. E. Law took several specimens in San Antonio cañon, October 18, 1903, and L. H. Miller took a specimen in the same locality, December 29, 1904. Several others were seen the same day. C. B. Linton took a pair on Santa Cruz Island, October 21, 1908.

364. (749) **Regulus calendula calendula** (Linnaeus). RUBY-CROWNED KINGLET.

Breeds in the upper Transition and Boreal zones in the mountains, above 7000 feet, south at least to the San Jacinto Range. Abundant winter visitant to the lowlands and the Santa Barbara Islands. Arrives in the lower country during late September and the month of October, and leaves in March and early April. Extreme migration dates noted by J. Grinnell near Pasadena are: September 24 (1896) and April 15 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 50). In June, 1906, I saw several of these birds at about 9000 feet altitude in the San Bernardino Mountains, but was unable to locate any nests. A. W. Anthony found a nest containing half grown young at an altitude of 9000 feet in the San Jacinto Mountains, July 2, 1895 (Nidologist, III, 1895, 16). According to W. O. Emerson, this species is rare in the Volcan Mountains, San Diego County, and perhaps breeds among the firs (Belding, Land Bds. Pac. Dist., 1890, 246).

365. (749a) **Regulus calendula grinnelli** W. Palmer. SITKA KINGLET.

According to the A. O. U. *Check-List*, this sub-species ranges south in winter to middle California. We have one record for southern California, that of a female taken by H. W. Marsden at Redlands, San Bernardino County, March 24, 1903 (Bishop, Condor VII, 1905, 143). Now no. 9287 collection L. B. Bishop.

366. (751a) **Polioptila caerulea obscura** Ridgway. WESTERN GNAT-CATCHER.

Common resident of wooded and brushy localities, from the lowlands up to more than 5000 feet in the mountains. Occurs as high as 7500 feet in early fall. More widely distributed over the lower country in winter, also occurring at this season on the Santa Barbara Islands. Breeds mostly in May. Extreme nesting dates are: Nest containing young birds, noted by J. Grinnell near Pasadena, May 4, 1895 (Pub. 2, Pasadena Acad. Sci., 1898, 50), and four eggs, fresh, taken by W. M. Pierce in San Antonio Cañon, July 5, 1903.

367 (753) **Polioptila californica** Brewster. BLACK-TAILED GNATCATCHER.

Common resident, locally, on brushy mesas, washes and foothills, north to Ventura County. Breeds most plentifully in May. One of Mr. Brewster's type specimens was taken by J. G. Cooper at Saticoy, Ventura County, November 24, 1872, and another was collected by F. Stephens at Riverside, March 28, 1878 (Bull. Nutt. Orn. Club VI, 1881, 103). B. W. Evermann found this bird a resident of Ventura County (Auk III, 1886, 186). I have never heard of its occurrence in Santa Barbara County, but should not be surprised if it were found to occur there. It is common in certain parts of Los Angeles County at the present time where it was not noted at all a few years back. The first nest and eggs on record was taken by F. Stephens near San Bernardino, May 2, 1887, and is

now in the U. S. National Museum (Bendire, Proc. U. S. Nat. Mus. x, 1887, 549). Extreme nesting dates are: Four eggs, fresh, taken by Antonin Jay in the San Fernando Valley, Los Angeles County, April 7, 1901, and three eggs, incubation advanced, taken by W. M. Pierce near Claremont, Los Angeles County, July 12, 1904.

368. (754) **Myadestes townsendi** (Audubon). TOWNSEND SOLITAIRE.

Breeds in moderate numbers in the mountains from 6000 to 9500 feet altitude, south to the San Bernardino Range. Occasionally appears in the mesa and foothill region during the winter, at which season it occurs south to Lower California. Recorded by B. W. Evermann as a very rare migrant in Ventura County. Noted once or twice in the spring of 1881 (Auk III, 1886, 186). Female taken by H. S. Swarth at Los Angeles, February 2, 1901, and a bird seen by him at Switzer's Camp in the Arroyo Seco, October 19, 1900. Pair taken by Mr. Swarth on Mt. Wilson, October 21, 1899. Male taken by J. E. Law at San Dimas, Los Angeles County, March 20, 1901, and specimen taken by L. H. Miller in San Antonio Cañon, December 29, 1904. Two specimens taken and others seen by A. K. Fisher in Cajon Pass, San Bernardino County, January 2, 1891 (N. Am. Fauna no. 7, 1893, 144). Specimen taken by F. E. Blaisdell at Poway, San Diego County, February 23, 1884, and noted by him at Temecula, the same county, November 12, 1883. Specimen taken by L. Belding at San Diego, January 24, 1884 (Land Bds. Pac. Dist., 1890, 250). Two or three birds noted by W. O. Emerson in the Volcan Mountains, San Diego County, during the spring of 1884 (Bull. Cal. Acad. Sci., II, 1887, 424).

In Fish Cañon, 7000 feet in the San Bernardino Mountains, J. Grinnell and party found two nests on June 16, 1905. One contained three newly hatched young and the other, four considerably incubated eggs. Still another nest was found in the same locality, June 17, containing four eggs in which incubation was far advanced. In 1906, two sets, of four eggs each, were found on the 22nd and 24th of June. The first set was well incubated and the second was fresh (Univ. Calif. Publ. Zool. v, 1908, 128-9).

369. (758) **Hylocichla ustulata ustulata** (Nuttall). RUSSET-BACKED THRUSH.

Common summer resident of the willow regions of the lowlands. Arrives during the latter part of April and early May and leaves mostly in late August and the month of September. Breeds generally from the middle of May to the middle of June. Earliest in the spring near Pasadena noted by H. A. Gaylord, April 12 (1896) (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 51), and the latest in the fall, by H. S. Swarth in the Arroyo Seco, October 22, 1900. Adult female taken and three more birds seen, by J. Grinnell on Santa Barbara Island, May 16, 1897 (Pub. 1, Pasadena Acad. Sci., 1897, 8). Found common on San Clemente Island by C. B. Linton in October, 1907 (Condor x, 1908, 86). Extreme nesting dates are: Four eggs, incubation slight, taken by Antonin Jay near Rivera, Los Angeles County, May 14, 1905, and three eggs, incubation slight, taken by H. A. Gaylord in the same locality, July 11, 1894 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 51).

370. (759c) *Hylocichla guttata nanus* (Audubon). DWARF HERMIT THRUSH.

Common winter visitant from the foothills to the coast and on the Santa Barbara Islands. Noted by J. Grinnell near Pasadena from October 10 (1896) to May 9 (1896) (Pub. 2, Pasadena Acad. Sci., 1898, 51). C. B. Linton and myself found it plentiful on Santa Cruz Island in November and December, 1907, and Mr. Linton noted it on San Nicolas Island, March 30, 31, 1910. He also found it common on San Clemente Island from October to April (Condor x, 1908, 86).

371. (759d) *Hylocichla guttata slevini* Grinnell. MONTEREY HERMIT THRUSH.

Occurs in migrations; so far noted only in the spring, as follows: Five specimens by F. S. Daggett near Pasadena, April 8 to 26, 1896 (Condor III, 1901, 131). Male by H. W. Marsden near Redlands, San Bernardino County, April 16, 1903 (Bishop, Condor VII, 1905, 143).

372. (759e) *Hylocichla guttata sequoiensis* (Belding). SIERRA HERMIT THRUSH.

Breeds in the mountains above 6000 feet, south to the San Bernardino Range. Winters south to Lower California and Mexico. J. Grinnell found this hermit thrush common in the cañons among the north spurs of San Geronio Peak, San Bernardino Mountains. Many nests, both old and new, were found in June, 1905 and 1906, above 6300 feet altitude. A nest found in Fish Cañon, 7000 feet, June 16, 1905, contained four eggs in which incubation was nearly complete. Nests found June 18 and June 30, 1905, in South Fork Cañon, contained half-grown young. June 12, 1906, Mr. Grinnell found a set of five considerably incubated eggs in South Fork Cañon and on June 25, a set of four moderately incubated eggs was found in the same cañon. On June 15, 1907, a nest containing two eggs with the parent sitting, was found in the same locality. The next day there were three eggs in the nest, which proved to be the full complement (Univ. Calif. Publ. Zool. v, 1908, 130).

373. (761a) *Planesticus migratorius propinquus* (Ridgway). WESTERN ROBIN.

Common summer resident in the mountains from 5000 to 9000 feet altitude, south at least to the San Bernardino Range. More or less common winter visitant to the lower country, south to San Diego and probably occasionally crossing the Mexican line. Breeds mostly in May. Noted by J. Grinnell in the vicinity of Pasadena from October 5 (1897) to April 17 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 51). Observed by W. M. Pierce near Claremont, Los Angeles County, as late as May 3 (1903), and one bird seen by L. Belding at Campo, San Diego County, May 14, 1884 (Land Bds. Pac. Dist., 1890, 256). F. Stephens informs me that the Robin is abundant in the vicinity of San Diego during severe winters, but during many winters is not noted at all. In June, 1907, I noted several nests containing young birds at Bear Valley, 6750 feet altitude in the San Bernardino Mountains. J. Grinnell took a set of three eggs in which incubation was

nearly complete, in the upper Santa Ana Cañon, San Bernardino Mountains, June 12, 1906 (Univ. Calif. Publ. Zool. v, 1908, 132).

374. (763a) *Ixoreus naevius meruloides* (Swainson). NORTHERN VARIED THRUSH.

Usually fairly common in winter from the foothills to the coast and on the Santa Barbara Islands. South at least to San Diego County. Some winters much less plentiful than others. Particularly common wherever the "California holly" grows abundantly. Noted by H. S. Swarth in the Arroyo Seco above Pasadena, as early as October 23 (1900), and by J. Grinnell near Pasadena, as late as April 10 (1897) (Pub. 2, Pasadena Acad. Sci., 1898, 51). Found common at Riverside during February, 1907, by H. E. Wilder, and several specimens taken by H. W. Marsden at Witch Creek, San Diego County, in January and February, the same year. Pair noted by F. E. Blaisdell in the Volcan Mountains, San Diego County, in November (Belding, Land Bds. Pac. Dist., 1890, 260). Several specimens taken by C. B. Linton on San Clemente Island, from January to April, 1907 (Condor x, 1908, 86).

375. (767) *Sialia mexicana occidentalis* J. K. Townsend. WESTERN BLUEBIRD.

Common summer resident from the foothills up to over 10,000 feet in the mountains, south to Los Angeles County. Common in winter over the lower country, south to Lower California. Breeds mostly in May. Male taken by C. B. Linton on San Clemente Island in December, 1908. I have found this bird breeding plentifully in the hills of northern Santa Barbara County, J. S. Appleton reports it a common breeder in the Simi Valley, Ventura County, and it is plentiful in summer in the mountains of Los Angeles County, from 2000 feet to the summits, occasionally nesting at lower altitudes. Extreme nesting dates are: Six eggs, considerably incubated, taken by E. Simmons near Newhall, Los Angeles County, May 4, 1897, and four eggs, incubation slight, taken by H. A. Gaylord near Pasadena, May 24, 1892 (Grinnell, Pub. 2, Pasadena Acad. Sci., 1898, 52).

376. (767b) *Sialia mexicana anabelae* Anthony. SAN PEDRO BLUEBIRD.

According to the A. O. U. *Check-List*, this sub-species ranges from the mountains of southern Los Angeles County, southward. The bluebirds of the extreme southern end of the state are intermediate between this form and the last, and are not typical of either. Robert Ridgway says "Specimens from San Diego County and southern Los Angeles County, are much nearer this form than they are to *occidentalis*" (Bds. N. & Mid. Am. iv, 1907, 151). This bird is an abundant breeder in the San Bernardino and San Jacinto Mountains and, according to L. Belding, breeds commonly in the timbered parts of San Diego County (Land Bds. Pac. Dist., 1890, 262).

377. (768) *Sialia currucoides* (Bechstein). MOUNTAIN BLUEBIRD.

Breeds in the higher mountains, mostly on the eastern slope, south to the San Bernardino Range. More or less common in the lower country in winter, south to Lower California. Breeds in May. Recorded by B. W. Evermann as a rare winter visitant to Ventura County. He saw a single individual near Saticoy in

December (Auk III, 1886, 186). I have found it plentiful during some winters in the vicinity of Los Angeles, and during other winters have failed to see it. According to J. G. Cooper, during the severe winter of 1861-2, these birds came down in large numbers to the vicinity of San Diego and remained until the end of February, when all suddenly disappeared (Land Bds. Cal., 1870, 29). During the spring of 1884, L. Belding found it common at San Diego until March 15, when it disappeared. A large flock returned March 29, during a cold rain storm, and stayed two days. A female taken April 4, was the last seen (Land Bds. Pac. Dist., 1890, 263). During June, 1907, I found the Mountain Bluebird fairly common at Bear Valley, 6750 feet altitude in the San Bernardino Mountains. Several nests were examined, all of which contained young (Condor XII, 1910, 44).

### HYPOTHETICAL LIST

1. (5) **Colymbus dominicus brachypterus** Chapman. MEXICAN GREBE.  
Often quoted from W. Gambel as occurring in "Upper California." No definite record.

2. (83) **Thalassogeron culminatus** (Gould). YELLOW-NOSED ALBATROSS.  
An inhabitant of southern oceans. Said to occur casually north to the coast of Oregon. No California specimens known.

3. (84) **Phoebetria palpebrata** (J. R. Forster). SOOTY ALBATROSS.  
A southern species which has frequently been stated to occur "north to the coast of Oregon," without, however, a great deal of definite data to substantiate its occurrence so far north. A specimen recorded by C. P. Streater as having been taken near Santa Barbara (Orn. & Ool. XI, 1886, 90). Its present whereabouts unknown.

4. (87) **Priocella glacialis** (A. Smith). SLENDER-BILLED FULMAR.  
A bird of southern oceans. Said to occur north along the Pacific coast to Oregon. Supposed skeleton found by J. G. Cooper on Catalina Island in 1863 (Baird, Brewer & Ridg., Water Bds. N. Am. II, 1884, 374). Also recorded by Dr. Cooper as found dead on the beach near Ventura (Auk IV, 1887, 87).

5. (181) **Olor buccinator** (Richardson). TRUMPETER SWAN.  
This bird, now believed to be nearly if not quite, extinct, is frequently stated to have occurred in winter in Los Angeles County. So far as I have been able to ascertain, these statements all originated from specimens obtained by A. M. Shields, which specimens, I am informed by Mr. Shields, were destroyed in the San Francisco fire. As it has since been found that the Whistling Swan (*Olor columbianus*), is a fairly common winter visitant to Los Angeles County, and as *buccinator* has not been further noted in this locality, I am inclined to believe that Mr. Shields' specimens were wrongly identified, and should be referred to *columbianus*.

6. (183) **Ajaia ajaja** (Linnaeus). ROSEATE SPOONBILL.  
Recorded by W. Gambel as occurring on the coast of California in 1849

(Journ. Acad. Nat. Sci. Phil., 2nd. ser. I, 1849, 222). Not known that he secured specimens in the state. R. B. Herron informed F. Stephens that he saw a bird of this species standing in a pond, about four miles south of San Bernardino, June 20, 1903. It was feeding and paid no attention as he drove past within gun shot. At first he thought it was a Wood Ibis, but, on coming nearer, he saw the pink tinge of plumage and the spatulate bill. On his returning the next morning with a gun, the bird was gone. Mr. Stephens was further informed by H. E. Wilder that during 1902, while in Riverside, he saw a bird fly over that he felt sure was a Roseate Spoonbill (Condor VI, 1904, 139). While these facts would seem to show that this bird probably does occasionally occur in southern California, there still remains an element of doubt, due to a possibility of misidentification.

7. (255) **Totanus flavipes** (Gmelin). **YELLOW-LEGS.**

In migrations, mainly east of the Rocky Mountains (A. O. U. *Check-List*, 1910, 120). Noted in southern Lower California (Brewster, Bull. Mus. Comp. Zool. XLI, 1902, 66). According to E. Heller, noted twice at Riverside during migrations (Condor III, 1901, 100). Mr. Heller writes me that it is possible that these birds were wrongly identified, and that he does not know the present whereabouts of the specimens.

8. (272) **Charadrius dominicus dominicus** Müller. **GOLDEN PLOVER.**

In migration to California. Formerly abundant, now becoming rare (A. O. U. *Check-List*, 1910, 127). Young male taken by M. Abbott Frazar at San Jose del Cabo, Lower California, October 18, 1887 (Brewster, Bull. Mus. Comp. Zool. XLI, 1902, 71). Bradford Torrey records seeing a bird of this species at Coronado Beach, San Diego County, January 12, 15 and 20, 1908 (Condor XI, 1909, 207). While Mr. Torrey is well known to be a most careful observer, I feel that records of birds belonging to the group of waders should not be considered conclusive without the actual taking of specimens.

9. (442). **Muscivora tyrannus** (Linnaeus). **FORK-TAILED FLYCATCHER.**

Specimen obtained from a dealer in California curiosities, at Santa Monica, Los Angeles County, recorded by G. L. Toppan (Orn. & Ool. IX, 1884, 48). Supposed to have been shot near that place in late summer, 1883.

10. (464a) **Empidonax difficilis cineritius** Brewster. **SAN LUCAS FLYCATCHER.**

Lower California. Breeds as far north as the Cuyamaca Mountains, San Diego County (A. O. U. *Check-List*, 1910, 215). Breeding in the Cuyamaca Mountains from 4000 to 6000 feet elevation, latter part of June, 1895 (Anthony, Auk XII, 1895, 390). In the summer of 1909, F. Stephens went to the Cuyamaca Mountains in the interests of the University of California Museum of Vertebrate Zoology, with the chief object of securing this flycatcher. He secured a number of breeding birds, of which Mr. Grinnell writes me: "I consider them identical with *Empidonax difficilis difficilis*, as occurring throughout California. They are somewhat more worn and, possibly, faded than some other examples of *difficilis* at hand, but I would certainly not consider them

as belonging to any other race." Robert Ridgway says: "I have considerable difficulty in separating this form satisfactorily from *E. d. difficilis*, from which it certainly is not more than subspecifically distinct, birds from the extreme northern portion of Lower California and some of those from San Diego County, California, being unmistakably intergrades" (Bds. N. & Mid. Am. IV, 1907, 580).

11. (498a) **Agelaius phoeniceus sonoriensis** Ridgway. SONORA REDWING.

Two males and a female taken by H. W. Marsden at Redlands, San Bernardino County, January 22, March 28 and January 10, 1903, and a male taken by the same collector at Witch Creek, San Diego County, April 13, 1904, considered by H. C. Oberholser to belong to this subspecies (Bishop, Condor VII, 1905, 142). Now nos. 9173, 8306, 8304, 10847 collection L. B. Bishop. Probably individual variation in *Agelaius phoeniceus neutralis*.

12. (16.3 Hyp. List). **Icterus icterus** (Linnaeus). TROUPIAL.

One record, that of a male taken by J. H. Bowles in Mission Cañon, near Santa Barbara, April 30, 1911. The plumage of this bird, as well as the feet, were in perfect condition and Mr. Bowles does not believe that it was an escaped cage bird (Condor XIII, 1911, 109). The Troupial is a native of the northeast coast of South America (Colombia, Venezuela, etc.), and has only once previously been recorded from the United States, at Charleston, South Carolina (Audubon, Bds. Am., 8vo. ed., VII, 1844, 357). The authenticity of this old record has been generally doubted and the species has been assigned to the hypothetical list by the A. O. U. Committee. While there can be absolutely no doubt as to the identity of Mr. Bowles' specimen, or the locality of capture, in placing the species in the hypothetical list I have been governed by the old rule that "the more unlikely the occurrence, the stronger should be the proof." It seems to me more probable that this specimen should have escaped from confinement—probably a sufficient length of time previous to the date of capture to allow its plumage and feet to regain their normal condition—than that it had wandered so great a distance as from its normal habitat to Santa Barbara.

13. (515b) **Pinicola enucleator californica** Price. CALIFORNIA PINE GROSBEEK.

According to J. H. Bowles, this species was noted by E. S. Spaulding at an elevation of nearly 3000 feet on Little Pine Mountain, Santa Barbara County, August 30, 1910 (Auk XXVIII, 1911, 175). J. Grinnell says regarding this record: "It is extremely unfortunate that Mr. Bowles put *Pinicola enucleator californica* on record from southern California upon such inadequate evidence as that submitted. The occurrence of the species at any season at so low an elevation as 3000 feet anywhere in California is in itself exciting of comment. But when we consider that the species has never been recorded in California south of the head of the San Joaquin River in Madera or Fresno County (Fisher, N. Am. Fauna No 7, May, 1893, 79), and never,

winter or summer, below the Canadian life zone, a record like the present one demands the severest test. The California Pine Grosbeak is a species the occurrence of which anywhere under such zonal conditions as the 'hills of Santa Barbara County,' to be thoroughly established would have to be backed up by the taking of specimens at the very least" (Condor XIII, 1911, 141).

14. (18.1 Hyp. List). **Piranga rubriceps** Gray. GRAY TANAGER.

A South American species, a specimen of which is said to have been secured at Dos Pueblos (Naples), Santa Barbara County (Bryant, Auk iv, 1887, 78). Probably an escaped cage bird (A. O. U. Check-List, 1910, 373).

15. (625) **Vireosylva flavoviridis** Cassin. YELLOW-GREEN VIREO.

W. W. Price records a specimen taken by him in the Santa Ana river bottom near Riverside, October 1, 1887 (Auk v, 1888, 210). I have endeavored to locate this specimen, but have been unable to do so. Mr. Price writes me that he disposed of it some years ago and has forgotten who obtained it.

16. (664) **Dendroica graciae** Baird. GRACE WARBLER.

B. W. Evermann records taking a male of this species near Santa Paula, Ventura County, May 3, 1881 (Auk III, 1886, 185). This specimen was later destroyed by fire. The locality seems an unlikely one, and Mr. Grinnell informs me that he believes it was probably an immature *Dendroica townsendi*.

17. (730a) **Sitta pygmaea leuconucha** Anthony. WHITE-NAPED NUTCRACKER.

Transition zone from San Diego County south to San Pedro Martir Mountains, Lower California (Anthony, Proc. Cal. Acad. Sci., ser. 2, II, 1889, 77). F. Stephens informs me that he believes this form is strictly Lower Californian and does not occur north of the United States boundary.

18. (742) **Chamaea fasciata fasciata** (Gambel). WREN-TIT.

A female collected by J. H. Bowles at Santa Barbara, February 18, 1910, was identified by H. C. Oberholser as typical of this species (Auk XXVIII, 1911, 178). It seems improbable that this form should occur at Santa Barbara, and Mr. Bowles' specimen is probably a case of individual variation of *Chamaea fasciata henshawii*.



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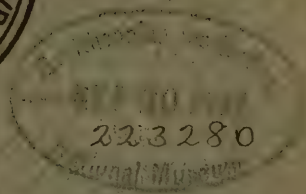
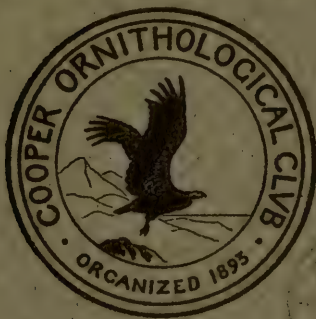
NUMBER 8

A SYSTEMATIC LIST OF THE  
BIRDS OF CALIFORNIA

BY

JOSEPH GRINNELL

CONTRIBUTION FROM THE MUSEUM OF VERTEBRATE ZOOLOGY  
OF THE UNIVERSITY OF CALIFORNIA



HOLLYWOOD, CALIFORNIA

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JOSEPH GRINNELL  
and  
HARRY S. SWARTH  
at the  
*Museum of Vertebrate Zoology*  
*University of California*

### NOTE

PACIFIC COAST AVIFAUNA No. 8 is the eighth in a series of publications issued by the Cooper Ornithological Club for the accommodation of papers whose length prohibits their appearance in THE CONDOR.

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## INTRODUCTION

It is believed that students of western ornithology will find use for a list of the birds of California arranged in accordance with the most modern views on classification. The following arrangement of our species will be observed to depart widely from that presented in most of the current textbooks. The majority of the latter in America are based upon the classification adopted twenty-six years ago in the first edition of the American Ornithologists' Union *Check-List of North American Birds*.

The system of grouping employed in the following pages is almost identically that based chiefly upon Gadow <sup>1</sup> and presented by Knowlton <sup>2</sup>. It is also very similar to that chosen by Ridgway in his latest systematic treatise on North American birds <sup>3</sup>. My allegiance to Knowlton's interpretation of the modern views of avian classification results from my belief, insofar as I have made inquiry and am able to judge, that he expresses most faithfully the concensus of opinion of those systematists whose accomplishments bring greatest confidence. Knowlton states his system to differ from Gadow's in certain minor modifications necessitated by "the later researches of Pycraft, Beddard, D'Arcy-Thompson, Shufeldt, Ridgway, Lucas, and other well-known authorities."

It is not for a moment to be inferred that I or anyone else believes that anywhere nearly a perfect system of classification has been reached. But I do maintain that it is anything but progressive to ignore the present attainments in our knowledge of the affinities of animals, merely because such recognition may entail some inconvenience resulting from the introduction of new names. It should prove not only useful but stimulating to the earnest student of our birds to have at hand an indication of modern views, even though in a mere nominal list.

The present list of species is extracted from a synonymic and distributional treatment of the birds of California which I now have on file in manuscript. It consists of the names of all species believed by the writer to deserve inclusion upon satisfactory grounds. That is, no birds of questionable standing, such as is ordinarily termed hypothetical, are given consideration. Wherein differences are observed in specific or subspecific names adopted, and in forms included or excluded, as compared with the latest (1910) edition of the A. O. U. *Check-List*, I am wholly responsible. My

- 
- (1) Gadow, Hans.  
1893. Vögel. II. Systematischer Theil, pp. vii+304, in Sechster Band, Vierte Abtheilung, Dr. H. G. Bronn's Klassen und Ordnungen des Thier-Reichs (Leipzig, C. F. Winter'sche Verlagshandlung).
- (2) Knowlton, Frank H.  
1909. Birds of the World - - - "edited by Robert Ridgway" (New York, Henry Holt and Company), pp. xiii+873, 16 col. pls., 233 ill.
- (3) Ridgway, Robert.  
1901-1911. The Birds of North and Middle America = Bull. No. 50, U. S. National Museum (Washington, Government Printing Office), parts i-v.

opinion in regard to the status of various subspecies is based upon my present understanding of the respective problems as illustrated by the extensive material at hand in the California Museum of Vertebrate Zoology.

While the sequence in Orders and Families is practically that of Knowlton, the species within each Family are arranged in the main in the order given in Ridgway's *Birds of North and Middle America*, as far as the groups have appeared in this as yet uncompleted work. Otherwise the order of species and genera is nearly that of the A. O. U. *Check-List*.

As a summary it is of interest to observe that, according to the present enumeration, 530 species and subspecies of birds are attributed to the State of California; discarding the third term of all trinomials, the number of "full species" is found to be 403; 253 Genera are represented, 51 Families, and eleven Orders.

Species with bracketed numbers are not of regular occurrence within the borders of the state. In other words, while the inclusion of the species so designated rests upon one or more perfectly authentic instances, these are to be considered in the nature of casual, or "accidental", occurrences. There are 55 species out of the whole list, that belong in this category.

JOSEPH GRINNELL.

*Berkeley, California,*

*July 10, 1912.*

## A SYSTEMATIC LIST OF THE BIRDS OF CALIFORNIA.

Class **AVES** BirdsSubclass **NEORNITHES** Latter-day Birds

## Order COLYMBIFORMES Loon-like Birds

## Suborder COLYMBI Loons

Family **GAVIIDAE** Loons

1. *Gavia immer* (Brünnich). COMMON LOON.
2. *Gavia pacifica* (Lawrence). PACIFIC LOON.
3. *Gavia stellata* (Pontoppidan). RED-THROATED LOON.

## Suborder PODICIPEDES Grebes

Family **PODICIPEDIDAE** Grebes

4. *Aechmophorus occidentalis* (Lawrence). WESTERN GREBE.
5. *Colymbus holboelli* (Reinhardt). HOLBOELL GREBE.
6. *Colymbus auritus* Linnaeus. HORNED GREBE.
7. *Colymbus nigricollis californicus* (Heermann). AMERICAN EARED GREBE.
8. *Podilymbus podiceps* (Linnaeus). PIED-BILLED GREBE.

## Order PROCELLARIIFORMES Petrel-like Birds

Family **DIOMEDEIDAE** Albatrosses

9. *Diomedea nigripes* Audubon. BLACK-FOOTED ALBATROSS.
10. *Diomedea albatrus* Pallas. SHORT-TAILED ALBATROSS.

Family **PROCELLARIIDAE** Fulmars, Shearwaters and Petrels

11. *Fulmarus glacialis glupischa* Stejneger. PACIFIC FULMAR.
12. *Fulmarus rodgersi* Cassin. RODGERS FULMAR.
- [13.] *Daption capense* (Linnaeus). PINTADO PETREL.
14. *Puffinus creatopus* Coues. PINK-FOOTED SHEARWATER.
15. *Puffinus opisthomelas* Coues. BLACK-VENTED SHEARWATER.
16. *Puffinus griseus* (Gmelin). DARK-BODIED SHEARWATER.
17. *Puffinus carneipes* Gould. FLESH-FOOTED SHEARWATER.
18. *Puffinus tenuirostris* (Temminck). SLENDER-BILLED SHEARWATER.
19. *Puffinus bulleri* Salvin. NEW ZEALAND SHEARWATER.
- [20.] *Prionofinus cinereus* (Gmelin). BLACK-TAILED SHEARWATER.
21. *Oceanodroma furcata* (Gmelin). FORKED-TAILED PETREL.
22. *Oceanodroma kaedingi* Anthony. KAEDING PETREL.
23. *Oceanodroma socorroensis* Townsend. SOCORRO PETREL.
24. *Oceanodroma homochroa* (Coues). ASHY PETREL.
25. *Oceanodroma melania* (Bonaparte). BLACK PETREL.
- [26.] *Oceanites oceanicus* (Kuhl). WILSON PETREL.

## Order CICONIIFORMES Stork-like Birds

## Suborder STEGANOPODES Totipalmate Swimmers

## Family PELECANIDAE Pelicans

27. *Pelecanus erythrorhynchos* Gmelin. WHITE PELICAN.  
 28. *Pelecanus californicus* Ridgway. CALIFORNIA BROWN PELICAN.

## Family PHALACROCORACIDAE Cormorants

29. *Phalacrocorax auritus albociliatus* Ridgway. FARALLON CORMORANT.  
 30. *Phalacrocorax penicillatus* (Brandt). BRANDT CORMORANT.  
 31. *Phalacrocorax pelagicus resplendens* Audubon. BAIRD CORMORANT.

## Family FREGATIDAE Frigate-birds

32. *Fregata aquila* (Linnaeus). MAN-O'-WAR-BIRD.

## Suborder ARDEAE Herons, Bitterns, etc.

## Family ARDEIDAE Herons, Bitterns, etc.

33. *Botaurus lentiginosus* (Montagu). AMERICAN BITTERN.  
 34. *Ixobrychus exilis* (Gmelin). LEAST BITTERN.  
 35. *Ardea herodias herodias* Linnaeus. GREAT BLUE HERON.  
 36. *Ardea herodias treganzai* Court. PALLID BLUE HERON.  
 37. *Herodias egretta* (Gmelin). AMERICAN EGRET.  
 38. *Egretta candidissima candidissima* (Gmelin). SNOWY EGRET.  
 39. *Butorides virescens anthonyi* (Mearns). ANTHONY GREEN HERON.  
 40. *Nycticorax nycticorax naevius* (Boddaert). BLACK-CROWNED NIGHT HERON.

## Suborder CICONIAE Storks, Ibises, etc.

## Family CICONIIDAE Storks and Wood Ibises

41. *Mycteria americana* Linnaeus. WOOD IBIS.

## Family IBIDIDAE Ibises

42. *Plegadis guarauna* (Linnaeus). WHITE-FACED GLOSSY IBIS.

## Family PLATALEIDAE Spoon-bills

- [43.] *Ajaia ajaja* (Linnaeus). ROSEATE SPOON-BILL.

## Order ANSERIFORMES Goose-like Birds

## Suborder ANSERES Ducks, Geese and Swans

## Family ANATIDAE Ducks, Geese and Swans

44. *Mergus americanus* Cassin. AMERICAN MERGANSER.  
 45. *Mergus serrator* Linnaeus. RED-BREASTED MERGANSER.  
 46. *Lophodytes cucullatus* (Linnaeus). HOODED MERGANSER.  
 47. *Anas platyrhynchos* Linnaeus. MALLARD.  
 [48.] *Anas rubripes* Brewster. BLACK DUCK.  
 49. *Chaulelasmus streperus* (Linnaeus). GADWALL.

- [50.] *Mareca penelope* (Linnaeus). EUROPEAN WIDGEON.
- 51. *Mareca americana* (Gmelin). BALDPATE.
- [52.] *Nettion crecca* (Linnaeus). EUROPEAN TEAL.
- 53. *Nettion carolinense* (Gmelin). GREEN-WINGED TEAL.
- 54. *Querquedula discors* (Linnaeus). BLUE-WINGED TEAL.
- 55. *Querquedula cyanoptera* (Vieillot). CINNAMON TEAL.
- 56. *Spatula clypeata* (Linnaeus). SHOVELLER.
- 57. *Dafila acuta* (Linnaeus). PINTAIL.
- 58. *Aix sponsa* (Linnaeus). WOOD DUCK.
- 59. *Marila americana* (Eyton). REDHEAD.
- 60. *Marila valisineria* (Wilson). CANVAS-BACK.
- 61. *Marila marila* (Linnaeus). GREATER SCAUP DUCK.
- 62. *Marila affinis* (Eyton). LESSER SCAUP DUCK.
- 63. *Marila collaris* (Donovan). RING-NECKED DUCK.
- 64. *Clangula clangula americana* Bonaparte. AMERICAN GOLDEN-EYE.
- 65. *Clangula islandica* (Gmelin). BARROW GOLDEN-EYE.
- 66. *Charitonetta albeola* (Linnaeus). BUFFLE-HEAD.
- 67. *Harelda hyemalis* (Linnaeus). OLD-SQUAW.
- 68. *Histrionicus histrionicus* (Linnaeus). HARLEQUIN DUCK.
- [69.] *Somateria spectabilis* (Linnaeus). KING EIDER.
- 70. *Oidemia americana* Swainson. AMERICAN SCOTER.
- 71. *Oidemia deglandi* Bonaparte. WHITE-WINGED SCOTER.
- 72. *Oidemia perspicillata* (Linnaeus). SURF SCOTER.
- 73. *Erismatura jamaicensis* (Gmelin). RUDDY DUCK.
- 74. *Chen hyperboreus hyperboreus* (Pallas). LESSER SNOW GOOSE.
- 75. *Chen rossi* (Cassin). ROSS SNOW GOOSE.
- 76. *Anser albifrons gambeli* Hartlaub. WHITE-FRONTED GOOSE.
- 77. *Branta canadensis canadensis* (Linnaeus). CANADA GOOSE.
- 78. *Branta canadensis occidentalis* (Baird). WHITE-CHEEKED GOOSE.
- 79. *Branta canadensis hutchinsi* (Richardson). HUTCHINS GOOSE.
- 80. *Branta canadensis minima* Ridgway. CACKLING GOOSE.
- 81. *Branta nigricans* (Lawrence). BLACK BRANT.
- [82.] *Philacte canagica* (Sevastianoff). EMPEROR GOOSE.
- 83. *Dendrocygna bicolor* (Vieillot). FULVOUS TREE-DUCK.
- 84. *Olor columbianus* (Ord). WHISTLING SWAN.
- [85.] *Olor buccinator* (Richardson). TRUMPETER SWAN.

### Order FALCONIFORMES Falcon-like Birds

Suborder CATHARTAE American Vultures

Family CATHARTIDAE American Vultures

- 86. *Gymnogyps californianus* (Shaw). CALIFORNIA CONDOR.
- 87. *Cathartes aura septentrionalis* Wied. TURKEY VULTURE.

Suborder ACCIPITRES Falcons, Hawks, etc.

Family FALCONIDAE Falcons, etc.

- 88. *Falco mexicanus* Schlegel. PRAIRIE FALCON.

89. *Falco peregrinus anatum* Bonaparte. DUCK HAWK.  
 90. *Falco columbarius columbarius* Linnaeus. NORTHERN PIGEON HAWK.  
 [91.] *Falco columbarius suckleyi* Ridgway. BLACK PIGEON HAWK.  
 [92.] *Falco columbarius richardsoni* Ridgway. RICHARDSON PIGEON HAWK.  
 93. *Falco sparverius sparverius* Linnaeus. AMERICAN SPARROW HAWK.

Family **BUTEONIDAE** Kites, Hawks, Eagles, etc.

94. *Elanus leucurus* (Vieillot). WHITE-TAILED KITE.  
 95. *Circus hudsonius* (Linnaeus). MARSH HAWK.  
 96. *Accipiter velox* (Wilson). SHARP-SHINNED HAWK.  
 97. *Accipiter cooperi* (Bonaparte). COOPER HAWK.  
 98. *Astur atricapillus striatulus* Ridgway. WESTERN GOSHAWK.  
 [99.] *Parabuteo unicinctus harrisi* (Audubon). HARRIS HAWK.  
 100. *Buteo borealis calurus* Cassin. WESTERN RED-TAILED HAWK.  
 101. *Buteo lineatus elegans* Cassin. RED-BELLIED HAWK.  
 [102.] *Buteo abbreviatus* Cabanis. ZONE-TAILED HAWK.  
 103. *Buteo swainsoni* Bonaparte. SWAINSON HAWK.  
 104. *Archibuteo lagopus sancti-johannis* (Gmelin). AMERICAN ROUGH-LEGGED HAWK.  
 105. *Archibuteo ferrugineus* (Lichtenstein). FERRUGINOUS ROUGH-LEGGED HAWK.  
 106. *Aquila chrysaëtos* (Linnaeus). GOLDEN EAGLE.  
 107. *Haliaeetus leucocephalus leucocephalus* (Linnaeus). SOUTHERN BALD EAGLE.  
 108. *Pandion haliaëetus carolinensis* (Gmelin). OSPREY.

Order **GALLIFORMES** Fowl-like Birds

Suborder **GALLI** Fowls, etc.

Family **PHASIANIDAE** Quail, Grouse, etc.

109. *Oreortyx picta picta* (Douglas). PAINTED QUAIL.  
 110. *Oreortyx picta plumifera* (Gould). MOUNTAIN QUAIL.  
 111. *Lophortyx californica californica* (Shaw). CALIFORNIA QUAIL.  
 112. *Lophortyx californica vallicola* (Ridgway). VALLEY QUAIL.  
 113. *Lophortyx californica catalinensis* Grinnell. CATALINA ISLAND QUAIL.  
 114. *Lophortyx gambeli* Gambel. DESERT QUAIL.  
 115. *Dendragapus obscurus fuliginosus* (Ridgway). SOOTY GROUSE.  
 116. *Dendragapus obscurus sierrae* Chapman. SIERRA GROUSE.  
 117. *Bonasa umbellus sabinii* (Douglas). OREGON RUFFED GROUSE.  
 118. *Pedioecetes phasianellus columbianus* (Ord). COLUMBIAN SHARP-TAILED GROUSE.  
 119. *Centrocercus urophasianus* (Bonaparte). SAGE-HEN.

## Order GRUIFORMES Crane-like Birds

Family **RALLIDAE** Rails, Coots, etc.

- 120. *Rallus obsoletus* Ridgway. CALIFORNIA CLAPPER RAIL.
- 121. *Rallus levipes* Bangs. LIGHT-FOOTED RAIL.
- 122. *Rallus virginianus* Linnaeus. VIRGINIA RAIL.
- 123. *Porzana carolina* (Linnaeus). SORA RAIL.
- 124. *Coturnicops noveboracensis* (Gmelin). YELLOW RAIL.
- 125. *Creciscus coturniculus* (Ridgway). CALIFORNIA BLACK RAIL.
- 126. *Gallinula galeata* (Lichtenstein). FLORIDA GALLINULE.
- 127. *Fulica americana* Gmelin. COOT.

Family **GRUIDAE** Cranes

- 128. *Grus canadensis* (Linnaeus). LITTLE BROWN CRANE.
- 129. *Grus mexicana* (Müller). SANDHILL CRANE.

## Order CHARADRIIFORMES Plover-like Birds

## Suborder LIMICOLAE Shore-birds

Family **CHARADRIIDAE** Snipe, Plover, etc.

- 130. *Phalaropus fulicarius* (Linnaeus). RED PHALAROPE.
- 131. *Lobipes lobatus* (Linnaeus). NORTHERN PHALAROPE.
- 132. *Steganopus tricolor* Vieillot. WILSON PHALAROPE.
- 133. *Recurvirostra americana* Gmelin. AVOCET.
- 134. *Himantopus mexicanus* (Müller). BLACK-NECKED STILT.
- 135. *Gallinago delicata* (Ord). WILSON SNIPE.
- 136. *Macrorhamphus griseus scolopaceus* (Say). LONG-BILLED DOW-ITCHER.
- 137. *Tringa canutus* Linnaeus. KNOT.
- 138. *Pisobia maculata* (Vieillot). PECTORAL SANDPIPER.
- 139. *Pisobia bairdi* (Coues). BAIRD SANDPIPER.
- 140. *Pisobia minutilla* (Vieillot). LEAST SANDPIPER.
- 141. *Pelidna alpina sakhalina* (Vieillot). RED-BACKED SANDPIPER.
- 142. *Ereunetes mauri* Cabanis. WESTERN SANDPIPER.
- 143. *Calidris leucophaea* (Pallas). SANDERLING.
- 144. *Limosa fedoa* (Linnaeus). MARBLED GODWIT.
- 145. *Totanus melanoleucus* (Gmelin). GREATER YELLOW-LEGS.
- 146. *Totanus flavipes* (Gmelin). LESSER YELLOW-LEGS.
- 147. *Helodromas solitarius cinnamomeus* (Brewster). WESTERN SOLITARY SANDPIPER.
- 148. *Catoptrophorus semipalmatus inornatus* (Brewster). WESTERN WILLET.
- 149. *Heteractitis incanus* (Gmelin). WANDERING TATTLER.
- [150.] *Bartramia longicauda* (Bechstein). UPLAND PLOVER.
- 151. *Actitis macularius* (Linnaeus). SPOTTED SANDPIPER.
- 152. *Numenius americanus* Bechstein. LONG-BILLED CURLEW.
- 153. *Numenius hudsonicus* Latham. HUDSONIAN CURLEW.

- 154. *Squatarola squatarola* (Linnaeus). BLACK-BELLIED PLOVER.
- 155. *Charadrius dominicus dominicus* Müller. AMERICAN GOLDEN PLOVER.
- 156. *Oxyechus vociferus vociferus* (Linnaeus). KILLDEER.
- 157. *AEgialitis semipalmata* (Bonaparte). SEMIPALMATED PLOVER.
- 158. *AEgialitis nivosa* Cassin. SNOWY PLOVER.
- [159.] *Ochthodromus wilsonius wilsonius* (Ord). WILSON PLOVER.
- 160. *Podasocys montanus* (Townsend). MOUNTAIN PLOVER.
- 161. *Aphriza virgata* (Gmelin). SURF-BIRD.
- 162. *Arenaria interpres morinella* (Linnaeus). RUDDY TURNSTONE.
- 163. *Arenaria melanocephala* (Vigors). BLACK TURNSTONE.
- [164.] *Haematopus frazari* Brewster. FRAZAR OYSTER-CATCHER.
- 165. *Haematopus bachmani* Audubon. BLACK OYSTER-CATCHER.

Suborder LARI Gulls, Terns, etc.

Family LARIDAE Gulls, Terns, etc.

- [166.] *Megalestris skua* (Brünnich). SKUA.
- 167. *Stercorarius pomarinus* (Temminck). POMARINE JAEGER.
- 168. *Stercorarius parasiticus* (Linnaeus). PARASITIC JAEGER.
- 169. *Stercorarius longicaudus* Vieillot. LONG-TAILED JAEGER.
- 170. *Rissa tridactyla pollicaris* Ridgway. PACIFIC KITTIWAKE.
- [171.] *Larus hyperboreus* Gunnerus. GLAUCOUS GULL.
- 172. *Larus glaucescens* Naumann. GLAUCOUS-WINGED GULL.
- 173. *Larus occidentalis* Audubon. WESTERN GULL.
- 174. *Larus argentatus* Pontoppidan. HERRING GULL.
- 175. *Larus californicus* Lawrence. CALIFORNIA GULL.
- 176. *Larus delawarensis* Ord. RING-BILLED GULL.
- 177. *Larus brachyrhynchus* Richardson. SHORT-BILLED GULL.
- 178. *Larus heermanni* Cassin. HEERMANN GULL.
- 179. *Larus philadelphia* (Ord). BONAPARTE GULL.
- 180. *Xema sabini* (Sabine). SABINE GULL.
- 181. *Sterna caspia* Pallas. CASPIAN TERN.
- 182. *Sterna maxima* Boddaert. ROYAL TERN.
- 183. *Sterna elegans* Gambel. ELEGANT TERN.
- 184. *Sterna forsteri* Nuttall. FORSTER TERN.
- 185. *Sterna hirundo* Linnaeus. COMMON TERN.
- 186. *Sterna paradisaea* Brünnich. ARCTIC TERN.
- 187. *Sterna antillarum* (Lesson). LEAST TERN.
- 188. *Hydrochelidon nigra surinamensis* (Gmelin). BLACK TERN.

Family ALCIDAE Auks, etc.

- 189. *Lunda cirrhata* (Pallas). TUFTED PUFFIN.
- 190. *Cerorhinca monocerata* (Pallas). RHINOCEROS AUKLET.
- 191. *Ptychoramphus aleuticus* (Pallas). CASSIN AUKLET.
- [192.] *Phaleris psittacula* (Pallas). PAROQUET AUKLET.
- 193. *Synthliboramphus antiquus* (Gmelin). ANCIENT MURRELET.
- 194. *Brachyramphus marmoratus* (Gmelin). MARBLED MURRELET.

- 195. *Brachyramphus hypoleucus* Xantus. XANTUS MURRELET.
- 196. *Cephus columba* Pallas. PIGEON GUILLEMOT.
- 197. *Uria troille californica* (Bryant). CALIFORNIA MURRE.

Suborder COLUMBAE Pigeons, Doves, etc.

Family COLUMBIDAE Pigeons and Doves.

- 198. *Columba fasciata fasciata* Say. BAND-TAILED PIGEON.
- 199. *Zenaidura macroura marginella* (Woodhouse). WESTERN MOURNING DOVE.
- 200. *Melopelia asiatica trudeau* (Audubon). WHITE-WINGED DOVE.
- 201. *Chaemepelia passerina pallescens* Baird. MEXICAN GROUND DOVE.

### Order CUCULIFORMES Cuckoo-like Birds

Suborder CUCULI Cuckoos, etc.

Family CUCULIDAE Cuckoos, etc.

- 202. *Geococcyx californianus* (Lesson). ROAD-RUNNER.
- 203. *Coccyzus americanus occidentalis* Ridgway. CALIFORNIA CUCKOO.

### Order CORACIIFORMES Roller-like Birds

Suborder CORACIAE Roller-like Birds

Family ALCEDINIDAE Kingfishers

- 204. *Ceryle alcyon* (Linnaeus). BELTED KINGFISHER.

Suborder STRIGES Owls

Family STRIGIDAE Owls

- 205. *Aluco pratincola* (Bonaparte). BARN OWL.
- 206. *Asio wilsonianus* (Lesson). LONG-EARED OWL.
- 207. *Asio flammeus* (Pontoppidan). SHORT-EARED OWL.
- 208. *Strix occidentalis occidentalis* (Xantus). SOUTHERN SPOTTED OWL.
- 209. *Strix occidentalis caurina* (Merriam). NORTHERN SPOTTED OWL.
- [210.] *Scotiaptex nebulosa nebulosa* (Forster). GREAT GRAY OWL.
- 211. *Cryptoglaux acadica acadica* (Gmelin). SAW-WHET OWL.
- 212. *Otus asio bendirei* (Brewster). CALIFORNIA SCREECH OWL.
- 213. *Otus asio gilmani* Swarth. SANUARO SCREECH OWL.
- 214. *Otus flammeolus* (Kaup). FLAMMULATED SCREECH OWL.
- 215. *Bubo virginianus pallescens* Stone. WESTERN HORNED OWL.
- 216. *Bubo virginianus pacificus* Cassin. PACIFIC HORNED OWL.
- 217. *Bubo virginianus saturatus* Ridgway. DUSKY HORNED OWL.
- [218.] *Nyctea nyctea* (Linnaeus). SNOWY OWL.
- 219. *Speotyto cunicularia hypogaea* (Bonaparte). BURROWING OWL.
- 220. *Glaucidium gnoma pinicola* Nelson. ROCKY MOUNTAIN PIGMY OWL.
- 221. *Glaucidium gnoma californicum* Sclater. CALIFORNIA PIGMY OWL.
- 222. *Micropallas whitneyi* (Cooper). ELF OWL.

## Suborder CAPRIMULGI Goatsuckers, etc.

Family **CAPRIMULGIDAE** Goatsuckers, etc.

- 223. *Phalaenoptilus nuttalli nuttalli* (Audubon). NUTTALL POOR-WILL.
- 224. *Phalaenoptilus nuttalli nitidus* Brewster. FROSTED POOR-WILL.
- 225. *Phalaenoptilus nuttalli californicus* Ridgway. DUSKY POOR-WILL.
- 226. *Chordeiles virginianus hesperis* Grinnell. PACIFIC NIGHTHAWK.
- [227.] *Chordeiles virginianus henryi* Cassin. WESTERN NIGHTHAWK.
- 228. *Chordeiles acutipennis texensis* Lawrence. TEXAS NIGHTHAWK.

## Suborder MICROPODII Hummingbirds and Swifts

Family **TROCHILIDAE** Hummingbirds

- 229. *Stellula calliope* (Gould). CALLIOPE HUMMINGBIRD.
- 230. *Selasphorus alleni* Henshaw. ALLEN HUMMINGBIRD.
- 231. *Selasphorus rufus* (Gmelin). RUFOUS HUMMINGBIRD.
- 232. *Calypte anna* (Lesson). ANNA HUMMINGBIRD.
- 233. *Calypte costae* (Bourcier). COSTA HUMMINGBIRD.
- 234. *Archilochus alexandri* (Bourcier & Mulsant). BLACK-CHINNED HUMMINGBIRD.

Family **MICROPODIDAE** Swifts

- 235. *Aëronautes melanoleucus* (Baird). WHITE-THROATED SWIFT.
- 236. *Cypseloides niger borealis* (Kennerly). NORTHERN BLACK SWIFT.
- 237. *Chaetura vauxi* (Townsend). VAUX SWIFT.

## Suborder PICI Woodpeckers, etc.

Family **PICIDAE** Woodpeckers

- 238. *Dryobates villosus harrisi* (Audubon). HARRIS WOODPECKER.
- 239. *Dryobates villosus hyloscopus* Cabanis & Heine. CABANIS WOODPECKER.
- 240. *Dryobates villosus orius* Oberholser. MODOC WOODPECKER.
- 241. *Dryobates pubescens gairdneri* (Audubon). GAIRDNER WOODPECKER.
- 242. *Dryobates pubescens turati* (Malherbe). WILLOW WOODPECKER.
- 243. *Dryobates pubescens homorus* Cabanis & Heine. BATCHELDER WOODPECKER.
- 244. *Dryobates scalaris cactophilus* Oberholser. CACTUS WOODPECKER.
- 245. *Dryobates nuttalli* (Gambel). NUTTALL WOODPECKER.
- 246. *Xenopicus albolarvatus albolarvatus* (Cassin). NORTHERN WHITE-HEADED WOODPECKER.
- 247. *Xenopicus albolarvatus gravirostris* Grinnell. SAN BERNARDINO WHITE-HEADED WOODPECKER.
- 248. *Picoides arcticus* (Swainson). ARCTIC THREE-TOED WOODPECKER.
- 249. *Sphyrapicus varius ruber* (Gmelin). NORTHERN RED-BREASTED SAP-SUCKER.
- 250. *Sphyrapicus varius daggetti* Grinnell. SIERRA RED-BREASTED SAP-SUCKER.

251. *Sphyrapicus varius nuchalis* Baird. RED-NAPED SAPSUCKER.  
 252. *Sphyrapicus thyroideus* (Cassin). WILLIAMSON SAPSUCKER.  
 253. *Phloeotomus pileatus abieticola* (Bangs). NORTHERN PILEATED  
 WOODPECKER.  
 254. *Melanerpes formicivorus bairdi* Ridgway. CALIFORNIA WOOD-  
 PECKER.  
 255. *Asyndesmus lewisi* Riley. LEWIS WOODPECKER.  
 256. *Centurus uropygialis* Baird. GILA WOODPECKER.  
 [257.] *Colaptes auratus luteus* Bangs. NORTHERN FLICKER.  
 258. *Colaptes cafer collaris* Vigors. RED-SHAFTED FLICKER.  
 259. *Colaptes cafer saturator* Ridgway. NORTHWESTERN FLICKER.  
 260. *Colaptes chrysoides mearnsi* Ridgway. MEARNS GILDED FLICKER.

Order PASSERIFORMES Sparrow-like Birds

Suborder ELEUTHERODACTYLI Perching Birds

Superfamily **CLAMATORES** Songless Perching Birds

Family **TYRANNIDAE** Tyrant Flycatchers

261. *Pyrocephalus rubinus mexicanus* Sclater. VERMILION FLYCATCHER.  
 262. *Nuttallornis borealis* (Swainson). OLIVE-SIDED FLYCATCHER.  
 263. *Myiochanes richardsoni richardsoni* (Swainson). WESTERN WOOD  
 PEWEE.  
 264. *Empidonax trailli trailli* (Audubon). TRAILL FLYCATCHER.  
 265. *Empidonax hammondi* (Xantus). HAMMOND FLYCATCHER.  
 266. *Empidonax wrighti* Baird. WRIGHT FLYCATCHER.  
 267. *Empidonax griseus* Brewster. GRAY FLYCATCHER.  
 268. *Empidonax difficilis difficilis* Baird. WESTERN FLYCATCHER.  
 [269.] *Sayornis phoebe* (Latham). EASTERN PHOEBE.  
 270. *Sayornis nigricans* (Swainson). BLACK PHOEBE.  
 271. *Sayornis sayus* (Bonaparte). SAY PHOEBE.  
 272. *Myiarchus cinerascens cinerascens* (Lawrence). ASH-THROATED  
 FLYCATCHER.  
 [273.] *Tyrannus tyrannus* (Linnaeus). EASTERN KINGBIRD.  
 274. *Tyrannus vociferans* Swainson. CASSIN KINGBIRD.  
 275. *Tyrannus verticalis* Say. WESTERN KINGBIRD.

Superfamily **OSCINES** Singing Birds

Family **ALAUDIDAE** Larks

276. *Otocoris alpestris actia* Oberholser. CALIFORNIA HORNED LARK.  
 277. *Otocoris alpestris rubea* Henshaw. RUDDY HORNED LARK.  
 278. *Otocoris alpestris strigata* Henshaw. STREAKED HORNED LARK.  
 279. *Otocoris alpestris merrilli* Dwight. DUSKY HORNED LARK.  
 [280.] *Otocoris alpestris leucolaema* (Coues). DESERT HORNED LARK.  
 281. *Otocoris alpestris ammophila* Oberholser. MOHAVE HORNED  
 LARK.  
 282. *Otocoris alpestris leucansiptila* Oberholser. YUMA HORNED  
 LARK.

283. *Otocoris alpestris insularis* Townsend. ISLAND HORNED LARK.

Family **MOTACILLIDAE** Wagtails

284. *Anthus rubescens* (Tunstall). AMERICAN PIPIT.

Family **TURDIDAE** Thrushes

285. *Hylocichla guttata guttata* (Pallas). ALASKA HERMIT THRUSH.  
 286. *Hylocichla guttata nanus* (Audubon). DWARF HERMIT THRUSH.  
 287. *Hylocichla guttata slevini* Grinnell. MONTEREY HERMIT THRUSH.  
 288. *Hylocichla guttata sequoiensis* (Belding). SIERRA HERMIT THRUSH.  
 289. *Hylocichla ustulata ustulata* (Nuttall). RUSSET-BACKED THRUSH.  
 290. *Hylocichla ustulata swainsoni* (Tschudi). OLIVE-BACKED THRUSH.  
 291. *Planesticus migratorius propinquus* (Ridgway). WESTERN ROBIN.  
 292. *Ixoreus naevius naevius* (Gmelin). VARIED THRUSH.  
 293. *Ixoreus naevius meruloides* (Swainson). NORTHERN VARIED THRUSH.  
 294. *Sialia mexicana occidentalis* Townsend. WESTERN BLUEBIRD.  
 295. *Sialia mexicana anabelae* Anthony. SAN PEDRO BLUEBIRD.  
 296. *Sialia currucoides* (Bechstein). MOUNTAIN BLUEBIRD.  
 297. *Myadestes townsendi* (Audubon). TOWNSEND SOLITAIRE.

Family **MIMIDAE** Mockingbirds

- [298.] *Toxostoma bendirei* (Coues). BENDIRE THRASHER.  
 299. *Toxostoma redivivum redivivum* (Gambel). CALIFORNIA THRASHER.  
 300. *Toxostoma redivivum pasadenense* (Grinnell). PASADENA THRASHER.  
 301. *Toxostoma lecontei lecontei* Lawrence. LECONTE THRASHER.  
 302. *Toxostoma crissale* Henry. CRISSAL THRASHER.  
 [303.] *Dumetella carolinensis* (Linnaeus). CATBIRD.  
 304. *Mimus polyglottos leucopterus* (Vigors). WESTERN MOCKINGBIRD.  
 305. *Oreoscoptes montanus* (Townsend). SAGE THRASHER.

Family **CINCLIDAE** Dippers

306. *Cinclus mexicanus unicolor* Bonaparte. AMERICAN DIPPER.

Family **TROGLODYTIDAE** Wrens

307. *Telmatodytes palustris paludicola* (Baird). TULE WREN.  
 308. *Telmatodytes palustris plesius* (Oberholser). WESTERN MARSH WREN.  
 309. *Heleodytes brunneicapillus couesi* (Sharpe). NORTHERN CACTUS WREN.  
 310. *Heleodytes brunneicapillus bryanti* Anthony. BRYANT CACTUS WREN.  
 311. *Thryomanes bewicki eremophilus* Oberholser. DESERT WREN.  
 312. *Thryomanes bewicki charienturus* Oberholser. SAN DIEGO WREN.  
 313. *Thryomanes bewicki catalinae* Grinnell. CATALINA ISLAND WREN.  
 314. *Thryomanes bewicki leucophrys* (Anthony). SAN CLEMENTE WREN.

315. *Thryomanes bewicki nesophilus* Oberholser. SANTA CRUZ ISLAND WREN.  
 316. *Thryomanes bewicki drymoeus* Oberholser. SAN JOAQUIN WREN.  
 317. *Thryomanes bewicki spilurus* (Vigors). VIGORS WREN.  
 318. *Thryomanes bewicki marinensis* Grinnell. NICASIO WREN.  
 319. *Troglodytes aëdon parkmani* Audubon. WESTERN HOUSE WREN.  
 320. *Nannus hiemalis pacificus* (Baird). WESTERN WINTER WREN.  
 321. *Salpinctes obsoletus obsoletus* (Say). COMMON ROCK WREN.  
 322. *Salpinctes obsoletus pulverius* Grinnell. SAN NICOLAS ROCK WREN.  
 323. *Catherpes mexicanus conspersus* Ridgway. NEVADA CANYON WREN.  
 324. *Catherpes mexicanus punctulatus* Ridgway. DOTTED CANYON WREN.

Family **CHAMAEIDAE** Wren-tits

325. *Chamaea fasciata henshawi* Ridgway. PALLID WREN-TIT.  
 326. *Chamaea fasciata fasciata* (Gambel). INTERMEDIATE WREN-TIT.  
 327. *Chamaea fasciata rufula* Ridgway. RUDDY WREN-TIT.  
 328. *Chamaea fasciata phaea* Osgood. NORTHERN WREN-TIT.

Family **SYLVIIDAE** Old-World Warblers, Kinglets, etc.

329. *Regulus satrapa olivaceus* Baird. WESTERN GOLDEN-CROWNED KINGLET.  
 330. *Regulus calendula cineraceus* Grinnell. ASHY KINGLET.  
 331. *Regulus calendula grinnelli* Palmer. SITKA KINGLET.  
 332. *Polioptila caerulea obscura* Ridgway. WESTERN GNATCATCHER.  
 333. *Polioptila plumbea* Baird. PLUMBEOUS GNATCATCHER.  
 334. *Polioptila californica* Brewster. BLACK-TAILED GNATCATCHER.

Family **HIRUNDINIDAE** Swallows

335. *Progne subis hesperia* Brewster. WESTERN MARTIN.  
 336. *Petrochelidon lunifrons lunifrons* (Say). CLIFF SWALLOW.  
 337. *Stelgidopteryx serripennis* (Audubon). ROUGH-WINGED SWALLOW.  
 338. *Riparia riparia* (Linnaeus). BANK SWALLOW.  
 339. *Hirundo erythrogaster* Boddaert. BARN SWALLOW.  
 340. *Iridoprocne bicolor* (Vieillot). TREE SWALLOW.  
 341. *Tachycineta thalassina lepida* Mearns. NORTHERN VIOLET-GREEN SWALLOW.

Family **AMPELIDAE** Waxwings

342. *Bombycilla garrula* (Linnaeus). BOHEMIAN WAXWING.  
 343. *Bombycilla cedrorum* Vieillot. CEDAR WAXWING.

Family **PTILOGONATIDAE** Silky Flycatchers

344. *Phainopepla nitens* (Swainson). PHAINOPEPLA.

Family **LANIIDAE** Shrikes

345. *Lanius borealis invictus* Grinnell. NORTHWESTERN SHRIKE.

346. *Lanius ludovicianus excubitorides* Swainson. WHITE-RUMPED SHRIKE.  
 347. *Lanius ludovicianus gambeli* Ridgway. CALIFORNIA SHRIKE.  
 348. *Lanius ludovicianus anthonyi* Mearns. ISLAND SHRIKE.

Family **VIREONIDAE** Vireos

- [349.] *Vireosylva flavoviridis* Cassin. YELLOW-GREEN VIREO.  
 350. *Vireosylva gilva swainsoni* (Baird). WESTERN WARBLING VIREO.  
 351. *Lanivireo solitarius cassini* (Xantus). CASSIN VIREO.  
 [352.] *Lanivireo solitarius plumbeus* (Coues). PLUMBEOUS VIREO.  
 353. *Vireo huttoni huttoni* Cassin. HUTTON VIREO.  
 354. *Vireo vicinior* Coues. GRAY VIREO.  
 355. *Vireo belli pusillus* Coues. CALIFORNIA LEAST VIREO.  
 356. *Vireo belli arizonae* Ridgway. ARIZONA LEAST VIREO.

Family **SITTIDAE** Nuthatches

357. *Sitta carolinensis aculeata* Cassin. SLENDER-BILLED NUTHATCH.  
 358. *Sitta canadensis* Linnaeus. RED-BREASTED NUTHATCH.  
 359. *Sitta pygmaea pygmaea* Vigors. PYGMY NUTHATCH.  
 360. *Sitta pygmaea leuconucha* Anthony. WHITE-NAPED NUTHATCH.

Family **PARIDAE** Titmice, etc.

361. *Baeolophus inornatus inornatus* (Gambel). PLAIN TITMOUSE.  
 362. *Baeolophus inornatus murinus* Ridgway. SAN DIEGO TITMOUSE.  
 363. *Baeolophus inornatus griseus* (Ridgway). GRAY TITMOUSE.  
 364. *Penthestes atricapillus occidentalis* (Baird). OREGON CHICKADEE.  
 365. *Penthestes gambeli gambeli* (Ridgway). MOUNTAIN CHICKADEE.  
 366. *Penthestes gambeli baileyae* Grinnell. BAILEY CHICKADEE.  
 367. *Penthestes rufescens rufescens* (Townsend). CHESTNUT-SIDED CHICKADEE.  
 368. *Penthestes rufescens neglectus* (Ridgway). MARIN CHICKADEE.  
 369. *Penthestes rufescens barlowi* (Grinnell). SANTA CRUZ CHICKADEE.  
 370. *Auriparus flaviceps flaviceps* (Sundevall). VERDIN.  
 371. *Psaltiriparus minimus minimus* (Townsend). COAST BUSH-TIT.  
 372. *Psaltiriparus minimus californicus* Ridgway. CALIFORNIA BUSH-TIT.  
 373. *Psaltiriparus plumbeus* Baird. LEAD-COLORED BUSH-TIT.

Family **CORVIDAE** Crows, Jays, etc.

374. *Corvus corax sinuatus* Wagler. WESTERN RAVEN.  
 375. *Corvus brachyrhynchos hesperis* Ridgway. WESTERN CROW.  
 376. *Nucifraga columbiana* (Wilson). CLARKE NUTCRACKER.  
 377. *Cyanocephalus cyanocephalus* (Wied). PINYON JAY.  
 378. *Pica pica hudsonia* (Sabine). BLACK-BILLED MAGPIE.  
 379. *Pica nuttalli* (Audubon). YELLOW-BILLED MAGPIE.  
 380. *Aphelocoma californica californica* (Vigors). CALIFORNIA JAY.  
 381. *Aphelocoma insularis* Henshaw. SANTA CRUZ ISLAND JAY.  
 382. *Aphelocoma woodhousei* (Baird). WOODHOUSE JAY.

383. *Cyanocitta stelleri frontalis* (Ridgway). BLUE-FRONTED JAY.  
 384. *Cyanocitta stelleri carbonacea* Grinnell. COAST JAY.  
 385. *Perisoreus obscurus obscurus* Ridgway. OREGON JAY.  
 386. *Perisoreus obscurus griseus* Ridgway. GRAY JAY.

Family **CERTHIIDAE** Creepers

387. *Certhia familiaris zelotes* Osgood. SIERRA CREEPER.  
 388. *Certhia familiaris occidentalis* Ridgway. CALIFORNIA CREEPER.

Family **MNIOTILTIDAE** Wood Warblers

- [389.] *Mniotilta varia* (Linnaeus). BLACK-AND-WHITE WARBLER.  
 [390.] *Vermivora peregrina* (Wilson). TENNESSEE WARBLER.  
 391. *Vermivora celata celata* (Say). ORANGE-CROWNED WARBLER.  
 392. *Vermivora celata lutescens* (Ridgway). LUTESCENT WARBLER.  
 393. *Vermivora celata sordida* (Townsend). DUSKY WARBLER.  
 394. *Vermivora rubricapilla gutturalis* (Ridgway). CALAVERAS WARBLER.  
 395. *Vermivora luciae* (Cooper). LUCY WARBLER.  
 396. *Dendroica aestiva sonorana* Brewster. SONORA YELLOW WARBLER.  
 397. *Dendroica aestiva brewsteri* Grinnell. CALIFORNIA YELLOW WARBLER.  
 398. *Dendroica aestiva rubiginosa* (Pallas). ALASKA YELLOW WARBLER.  
 [399.] *Dendroica magnolia* (Wilson). MAGNOLIA WARBLER.  
 [400.] *Dendroica caerulescens caerulescens* (Gmelin). BLACK-THROATED BLUE WARBLER.  
 401. *Dendroica coronata hooveri* McGregor. ALASKA MYRTLE WARBLER.  
 402. *Dendroica auduboni auduboni* (Townsend). AUDUBON WARBLER.  
 403. *Dendroica nigrescens* (Townsend). BLACK-THROATED GRAY WARBLER.  
 404. *Dendroica townsendi* (Townsend). TOWNSEND WARBLER.  
 [405.] *Dendroica virens* (Gmelin). BLACK-THROATED GREEN WARBLER.  
 406. *Dendroica occidentalis* (Townsend). HERMIT WARBLER.  
 [407.] *Dendroica pensylvanica* (Linnaeus). CHESTNUT-SIDED WARBLER.  
 [408.] *Dendroica palmarum palmarum* (Gmelin). PALM WARBLER.  
 409. *Oporornis tolmiei* (Townsend). TOLMIE WARBLER.  
 [410.] *Seiurus aurocapillus* (Linnaeus). OVEN-BIRD.  
 [411.] *Seiurus motacilla* (Vieillot). LOUISIANA WATER-THRUSH.  
 [412.] *Seiurus noveboracensis notabilis* Ridgway. ALASKA WATER-THRUSH.  
 413. *Geothlypis trichas occidentalis* Brewster. WESTERN YELLOW-THROAT.  
 414. *Geothlypis trichas scirpicola* Grinnell. TULE YELLOWTHROAT.  
 415. *Geothlypis trichas sinuosa* Grinnell. SALT MARSH YELLOW-THROAT.

416. *Icteria virens longicauda* Lawrence. LONG-TAILED CHAT.  
 417. *Wilsonia pusilla pileolata* (Pallas). ALASKA PILEOLATED WARBLER.  
 418. *Wilsonia pusilla chryseola* Ridgway. GOLDEN PILEOLATED WARBLER.  
 [419.] *Setophaga ruticilla* (Linnaeus). AMERICAN REDSTART.

Family **TANGARIDAE** Tanagers

420. *Piranga rubra cooperi* Ridgway. COOPER TANAGER.  
 421. *Piranga ludoviciana* (Wilson). WESTERN TANAGER.

Family **ICTERIDAE** Troupials, etc.

422. *Molothrus ater artemisiae* Grinnell. NEVADA COWBIRD.  
 423. *Molothrus ater obscurus* (Gmelin). DWARF COWBIRD.  
 [424.] *Euphagus carolinus* (Müller). RUSTY BLACKBIRD.  
 425. *Euphagus cyanocephalus* (Wagler). BREWER BLACKBIRD.  
 426. *Icterus cucullatus nelsoni* Ridgway. ARIZONA HOODED ORIOLE.  
 427. *Icterus parisorum* Bonaparte. SCOTT ORIOLE.  
 428. *Icterus bullocki* (Swainson). BULLOCK ORIOLE.  
 429. *Agelaius tricolor* (Audubon). TRICOLORED RED-WING.  
 430. *Agelaius phoeniceus californicus* Nelson. BI-COLORED RED-WING.  
 431. *Agelaius phoeniceus neutralis* Ridgway. SAN DIEGO RED-WING.  
 432. *Agelaius phoeniceus caurinus* Ridgway. NORTHWESTERN RED-WING.  
 433. *Agelaius phoeniceus sonoriensis* Ridgway. SONORA RED-WING.  
 434. *Xanthocephalus xanthocephalus* (Bonaparte). YELLOW-HEADED BLACKBIRD.  
 435. *Sturnella neglecta* Audubon. WESTERN MEADOWLARK.  
 [436.] *Dolichonyx oryzivorus* (Linnaeus). BOBOLINK.

Family **FRINGILLIDAE** Finches

437. *Hesperiphona vespertina montana* Ridgway. WESTERN EVENING GROSBEAK.  
 438. *Loxia curvirostra minor* (Brehm). AMERICAN CROSSBILL.  
 439. *Loxia curvirostra bendirei* Ridgway. SIERRA CROSSBILL.  
 440. *Pinicola enucleator californica* Price. CALIFORNIA PINE GROSBEAK.  
 441. *Leucosticte tephrocotis tephrocotis* Swainson. GRAY-CROWNED ROSY FINCH.  
 442. *Acanthis linaria linaria* (Linnaeus). COMMON REDPOLL.  
 443. *Spinus pinus pinus* (Wilson). PINE SISKIN.  
 444. *Astragalinus tristis salicamans* (Grinnell). WILLOW GOLDFINCH.  
 445. *Astragalinus psaltria hesperophilus* Oberholser. GREEN-BACKED GOLDFINCH.  
 446. *Astragalinus lawrencei* (Cassin). LAWRENCE GOLDFINCH.  
 447. *Carpodacus cassinii* Baird. CASSIN PURPLE FINCH.  
 448. *Carpodacus purpureus californicus* Baird. CALIFORNIA PURPLE FINCH.  
 449. *Carpodacus mexicanus frontalis* (Say). CALIFORNIA LINNET.  
 450. *Carpodacus mexicanus clementis* Mearns. SAN CLEMENTE LINNET.

- [451.] *Calcarius lapponicus alascensis* Ridgway. ALASKA LONGSPUR.
- 452. *Calamospiza melanocorys* Stejneger. LARK BUNTING.
- 453. *Chondestes grammacus strigatus* (Swainson). WESTERN LARK SPARROW.
- 454. *Poocetes gramineus confinis* Baird. WESTERN VESPER SPARROW.
- 455. *Poocetes gramineus affinis* Miller. OREGON VESPER SPARROW.
- [456.] *Passerculus sandwichensis sandwichensis* (Gmelin). ALEUTIAN SAVANNAH SPARROW.
- 457. *Passerculus sandwichensis alaudinus* Bonaparte. WESTERN SAVANNAH SPARROW.
- 458. *Passerculus sandwichensis nevadensis* Grinnell. NEVADA SAVANNAH SPARROW.
- 459. *Passerculus sandwichensis bryanti* Ridgway. BRYANT MARSH SPARROW.
- 460. *Passerculus beldingi* Ridgway. BELDING MARSH SPARROW.
- 461. *Passerculus rostratus rostratus* (Cassin). LARGE-BILLED MARSH SPARROW.
- 462. *Ammodramus savannarum bimaculatus* (Swainson). WESTERN GRASSHOPPER SPARROW.
- [463.] *Passerherbulus caudacutus nelsoni* (Allen). NELSON SPARROW.
- 464. *Aimophila ruficeps ruficeps* (Cassin). RUFOUS-CROWNED SPARROW.
- 465. *Amphispiza bilineata deserticola* Ridgway. DESERT BLACK-THROATED SPARROW.
- 466. *Amphispiza belli* Cassin. BELL SPARROW.
- 467. *Amphispiza nevadensis canescens* Grinnell. CALIFORNIA SAGE SPARROW.
- 468. *Amphispiza nevadensis nevadensis* Ridgway. NEVADA SAGE SPARROW.
- 469. *Junco hyemalis hyemalis* (Linnaeus). SLATE-COLORED JUNCO.
- 470. *Junco oreganus oreganus* (Townsend). OREGON JUNCO.
- 471. *Junco oreganus thurberi* Anthony. SIERRA JUNCO.
- 472. *Junco oreganus pinosus* Loomis. POINT PINOS JUNCO.
- [473.] *Junco phaeonotus caniceps* (Woodhouse). GRAY-HEADED JUNCO.
- [474.] *Spizella monticola ochracea* Brewster. WESTERN TREE SPARROW.
- 475. *Spizella passerina arizonae* Coues. WESTERN CHIPPING SPARROW.
- 476. *Spizella atrogularis* (Cabanis). BLACK-CHINNED SPARROW.
- 477. *Spizella breweri* Cassin. BREWER SPARROW.
- [478.] *Zonotrichia querula* (Nuttall). HARRIS SPARROW.
- 479. *Zonotrichia coronata* (Pallas). GOLDEN-CROWNED SPARROW.
- 480. *Zonotrichia leucophrys leucophrys* (Forster). WHITE-CROWNED SPARROW.
- 481. *Zonotrichia leucophrys gambeli* (Nuttall). INTERMEDIATE SPARROW.
- 482. *Zonotrichia leucophrys nuttalli* Ridgway. NUTTALL SPARROW.
- [483.] *Zonotrichia albicollis* (Gmelin). WHITE-THROATED SPARROW.
- [484.] *Melospiza melodia caurina* Ridgway. YAKUTAT SONG SPARROW.

485. *Melospiza melodia rufina* Bonaparte. RUSTY SONG SPARROW.
486. *Melospiza melodia phaea* Fisher. OREGON SONG SPARROW.
487. *Melospiza melodia cleonensis* McGregor. MENDOCINO SONG SPARROW.
488. *Melospiza melodia gouldi* Baird. MARIN SONG SPARROW.
489. *Melospiza melodia samuelis* Baird. SAMUELS SONG SPARROW.
490. *Melospiza melodia pusillula* Ridgway. SALT MARSH SONG SPARROW.
491. *Melospiza melodia santaecrucis* Grinnell. SANTA CRUZ SONG SPARROW.
492. *Melospiza melodia cooperi* Ridgway. SAN DIEGO SONG SPARROW.
493. *Melospiza melodia graminea* Townsend. SANTA BARBARA SONG SPARROW.
494. *Melospiza melodia clementae* Townsend. SAN CLEMENTE SONG SPARROW.
495. *Melospiza melodia heermanni* Baird. HEERMANN SONG SPARROW.
496. *Melospiza melodia mailliardi* Grinnell. MODESTO SONG SPARROW.
497. *Melospiza melodia maxillaris* Grinnell. SUISUN SONG SPARROW.
498. *Melospiza melodia merrilli* Brewster. MERRILL SONG SPARROW.
499. *Melospiza melodia fallax* (Baird). ROCKY MOUNTAIN SONG SPARROW.
500. *Melospiza melodia fischerella* Oberholser. MODOC SONG SPARROW.
501. *Melospiza melodia saltonis* Grinnell. SALTON SINK SONG SPARROW.
502. *Melospiza lincolni lincolni* Audubon. LINCOLN SPARROW.
503. *Melospiza lincolni gracilis* (Kittlitz). FORBUSH SPARROW.
- [504.] *Passerella iliaca iliaca* (Merrem). FOX-COLORED SPARROW.
505. *Passerella iliaca unalaschcensis* (Gmelin). SHUMAGIN FOX SPARROW.
506. *Passerella iliaca insularis* Ridgway. KADIAK FOX SPARROW.
507. *Passerella iliaca sinuosa* Grinnell. VALDEZ FOX SPARROW.
508. *Passerella iliaca meruloides* (Vigors). YAKUTAT FOX SPARROW.
509. *Passerella iliaca townsendi* (Audubon). TOWNSEND FOX SPARROW.
510. *Passerella iliaca fuliginosa* Ridgway. SOOTY FOX SPARROW.
511. *Passerella iliaca altivagans* Riley. ALBERTA FOX SPARROW.
512. *Passerella iliaca schistacea* Baird. SLATE-COLORED FOX SPARROW.
513. *Passerella iliaca megarhyncha* Baird. THICK-BILLED FOX SPARROW.
514. *Passerella iliaca stephensi* Anthony. STEPHENS FOX SPARROW.
515. *Oreospiza chlorura* (Audubon). GREEN-TAILED TOWHEE.
- [516.] *Pipilo maculatus oregonus* Bell. OREGON TOWHEE.
517. *Pipilo maculatus falcifer* McGregor. SAN FRANCISCO TOWHEE.
518. *Pipilo maculatus megalonyx* Baird. SPURRED TOWHEE.
519. *Pipilo maculatus curtatus* Grinnell. NEVADA TOWHEE.
520. *Pipilo maculatus clementae* Grinnell. SAN CLEMENTE TOWHEE.
521. *Pipilo aberti* Baird. ABERT TOWHEE.
522. *Pipilo crissalis crissalis* (Vigors). CALIFORNIA BROWN TOWHEE.
523. *Pipilo crissalis carolae* McGregor. NORTHERN BROWN TOWHEE.
524. *Pipilo crissalis senicula* Anthony. ANTHONY BROWN TOWHEE.

525. *Passerina amoena* (Say). LAZULI BUNTING.  
526. *Guiraca caerulea salicarius* Grinnell. CALIFORNIA BLUE GROSBK.  
527. *Guiraca caerulea lazula* (Lesson). ARIZONA BLUE GROSBK.  
[528.] *Zamelodia ludoviciana* (Linnaeus). ROSE-BREASTED GROSBK.  
529. *Zamelodia melanocephala capitalis* (Baird). PACIFIC BLACK-  
HEADED GROSBK.  
530. *Zamelodia melanocephala melanocephala* (Swainson). ROCKY  
MOUNTAIN BLACK-HEADED GROSBK.



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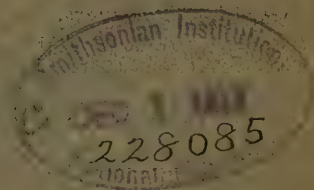
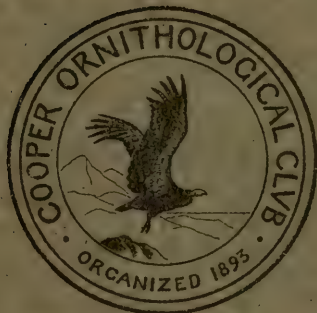
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*University of California*

#### NOTE

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## PREFACE

In presenting this list of the birds of the Fresno district the author is aware of its incompleteness. In this connection it might be well to state that some fifty species of birds reported from various sources have been omitted entirely for the reason that nothing definite could be recorded in regard to their habits and distribution, or because some doubt existed as to their being correctly identified.

More than ten years have elapsed since the first notes for this work were jotted down and in view of the mass of data available it seemed worth while to put on record the result of these years of observation in a region that has been all but neglected by ornithologists.

In looking over such literature as was available the writer has frequently been impressed with the lack of definite dates and other information regarding many of our most common birds. In many cases only two or three nesting or migration dates have been available from the entire State and these from widely separated points. It was the desire to place on record the many apparently obvious but hard-to-find facts pertaining to the birds of central California that, more than anything else perhaps, induced me to hasten the completion of this work.

Efforts were made to communicate with several persons who were known to have worked in this field previous to the advent of those who are now interested in bird study, with a thought of incorporating in the present paper such information as they might furnish; but the project was finally abandoned, as it proved to be an impossible task to learn the addresses of one or two, while the few replies that were received did not contain a sufficient amount of the desired information to be of distinct value.

The present paper, then, is simply a compilation of the knowledge of the present day workers in this part of the State, and should be regarded more as a vantage point from which we may begin anew a series of better and more thorough observations, than as a final review of all that is to be learned of the birds of Fresno County.

My only regret is that so little time has been available for bird study; but should my readers succeed in gleaning here and there from these pages some few grains of information that will tend to make them better acquainted with our feathered friends, or that will add a few facts to the general knowledge concerning the birds of this region, then the author's labors will not have been in vain. The real mission of this work will have been fulfilled, however, only when someone, more fortunately equipped with time and opportunities than the writer has ever been, is lead to see, not the little that has been done but rather the wonderful field for original research that exists in Fresno County, and is persuaded to take up and complete this work that has ever been so fascinating.

## THE FRESNO DISTRICT DEFINED

The above term has been applied in this paper to an area of which the city of Fresno is the center. The boundaries of this district, which have been arbitrarily fixed by the author, are, in some cases, not well defined; but it has been the writer's intention to include in this work notes from the floor of the valley only; and where occasional references have been made to stations outside of these limits they have been used with the belief that they might add to the general knowledge concerning the distribution of the particular species under consideration.

In general it may be said that the limits of the district here concerned are marked on the west by Firebaugh at the north and Wheatville at the south. To the east of Fresno a line might be drawn along the base of the Sierra Nevada foothills, beginning at Friant on the north and extending south through Centerville to Reedley. The San Joaquin River forms a natural northern boundary, while Laton and Riverdale are the most southern stations. This region lies in the exact geographical center of the state of California, with an average elevation of not over four hundred feet. It will not be surprising, then, to note that the majority of the birds listed are characteristic of the Lower Sonoran life zone, with species from higher belts occurring as migrants or winter visitants.

Within the Fresno district there are no natural woods with the exception of the oaks, willows, and sycamores along the San Joaquin River, the oaks and willows in the Kings River bottom, and a fringe of willows and cottonwoods that are found along some of the larger sloughs and canals. A growth of splendid valley oaks along the southern edge of the district, is a field scarcely as yet touched by any of the bird students of Fresno County; and that region, together with much of the bottom land along the Kings River from Centerville to Reedley, should furnish a wealth of interesting material if systematically worked. Personally, the author has spent the greater part of his all too little spare time in the highly cultivated and thickly settled section about Fresno, with occasional visits to other parts of the valley.

## STATUS OF THE WATER-BIRD POPULATION

The water birds of the region about Fresno, although highly interesting, are difficult of study. Their occurrence or absence depends upon the abundance or scarcity of water in the valley; hence their numbers vary greatly from season to season. One may sometimes spend the whole summer in locating the most favorable ponds and sloughs only to find that on account of a minimum rainfall these ponds are entirely dried up the next season. Again an unusually wet winter may result in an abundance of water and its accompanying host of birds in places where they had been almost unknown previously.

It is with regret that we note a gradually diminishing number of water fowl returning to us each fall. Doubtless the next few years will see the passing of several species forever, so far as this valley is concerned. While it is probably true that gunners are in a large measure responsible for the decrease in numbers of many species, particularly of the ducks and geese, yet a changed environment has been a potent factor in bringing about the present condition. It only requires a day's journey about the valley to convince anyone that conditions are rapidly becoming unsuited for waterfowl. The large grain and stock ranches are being subdivided, reclamation work is steadily reducing the swamp-covered areas, vineyards and orchards are springing up everywhere with a consequent great increase in population. Even the tule ponds that remain are often unsuitable for a nesting place on account of the custom of using them as foraging grounds for bands of hogs.

Such birds as rear their young in a very few weeks and are able to make use of any temporary overflow pond are not in immediate danger; but the ducks and geese and others that require concealment during the summer, or large open fields in winter, are surely doomed.

The author does not claim to have enumerated in the following pages all of the water birds that occur in the region under consideration, but mention has been made of each species that has been identified and it is hoped that the little introduction that has been given to some of the most beautiful and valuable of our birds will arouse a greater interest in them before many of them are gone forever.

### ACKNOWLEDGMENTS

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The nomenclature adopted in the following list is, except in a very few cases, that of the Third Edition of the American Ornithologists' Union *Check-List of North American Birds* (1910).

## CHECK-LIST OF THE SPECIES

1. WESTERN GREBE. *Aechmophorus occidentalis* (Lawrence).
2. PIED-BILLED GREBE. *Podilymbus podiceps* (Linnaeus).
3. CALIFORNIA GULL. *Larus californicus* Lawrence.
4. FORSTER TERN. *Sterna forsteri* Nuttall.
5. BLACK TERN. *Hydrochelidon nigra surinamensis* (Gmelin).
6. FARALLON CORMORANT. *Phalacrocorax auritus albociliatus* Ridgway.
7. WHITE PELICAN. *Pelecanus erythrorhynchos* Gmelin.
8. RED-BREASTED MERGANSER. *Mergus serrator* Linnaeus.
9. MALLARD. *Anas platyrhynchos* Linnaeus.
10. BALDPATE. *Mareca americana* (Gmelin).
11. GREEN-WINGED TEAL. *Nettion carolinense* (Gmelin).
12. CINNAMON TEAL. *Querquedula cyanoptera* (Vieillot).
13. SHOVELLER. *Spatula clypeata* (Linnaeus).
14. PINTAIL. *Dafila acuta* (Linnaeus).
15. WOOD DUCK. *Aix sponsa* (Linnaeus).
16. REDHEAD. *Marila americana* (Eyton).
17. RUDDY DUCK. *Erismatura jamaicensis* (Gmelin).
18. LESSER SNOW GOOSE. *Chen hyperboreus hyperboreus* (Pallas).
19. WHITE-FRONTED GOOSE. *Anser albifrons gambeli* Hartlaub.
20. CANADA GOOSE. *Branta canadensis canadensis* (Linnaeus).
21. HUTCHINS GOOSE. *Branta canadensis hutchinsi* (Richardson).
22. FULVOUS TREE-DUCK. *Dendrocygna bicolor* (Vieillot).
23. WHISTLING SWAN. *Olor columbianus* (Ord).
24. WHITE-FACED GLOSSY IBIS. *Plegadis guarauna* (Linnaeus).
25. AMERICAN BITTERN. *Botaurus lentiginosus* (Montagu).
26. LEAST BITTERN. *Ixobrychus exilis* (Gmelin).
27. GREAT BLUE HERON. *Ardea herodias herodias* Linnaeus.
28. ANTHONY GREEN HERON. *Butorides virescens anthonyi* (Mearns).
29. BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax naevius* (Boddaert).
30. SANDHILL CRANE. *Grus mexicana* (Müller).
31. VIRGINIA RAIL. *Rallus virginianus* Linnaeus.
32. FLORIDA GALLINULE. *Gallinula galeata* (Lichtenstein).
33. COOT. *Fulica americana* Gmelin.
34. NORTHERN PHALAROPE. *Lobipes lobatus* (Linnaeus).
35. AVOCET. *Recurvirostra americana* Gmelin.
36. BLACK-NECKED STILT. *Himantopus mexicanus* (Müller).
37. WILSON SNIPE. *Gallinago delicata* (Ord).
38. LEAST SANDPIPER. *Pisobia minutilla* (Vieillot).
39. GREATER YELLOW-LEGS. *Totanus melanoleucus* (Gmelin).
40. LONG-BILLED CURLEW. *Numenius americanus* Bechstein.
41. HUDSONIAN CURLEW. *Numenius hudsonicus* Latham.
42. KILLDEER. *Oxyechus vociferus* (Linnaeus).
43. MOUNTAIN PLOVER. *Podasocys montanus* (Townsend).
44. PLUMED QUAIL. *Oreortyx picta plumifera* (Gould).
45. VALLEY QUAIL. *Lophortyx californica vallicola* (Ridgway).

46. BAND-TAILED PIGEON. *Columba fasciata fasciata* Say.
47. WESTERN MOURNING DOVE. *Zenaidura macroura marginella* (Woodhouse).
48. CALIFORNIA CONDOR. *Gymnogyps californianus* (Shaw).
49. TURKEY VULTURE. *Cathartes aura septentrionalis* Wied.
50. WHITE-TAILED KITE. *Elanus leucurus* (Vieillot).
51. MARSH HAWK. *Circus hudsonius* (Linnaeus).
52. SHARP-SHINNED HAWK. *Accipiter velox* (Wilson).
53. COOPER HAWK. *Accipiter cooperi* (Bonaparte).
54. WESTERN RED-TAILED HAWK. *Buteo borealis calurus* Cassin.
55. SWAINSON HAWK. *Buteo swainsoni* Bonaparte.
56. AMERICAN ROUGH-LEGGED HAWK. *Archibuteo lagopus sancti-johannis* (Gmelin).
57. FERRUGINOUS ROUGH-LEGGED HAWK. *Archibuteo ferrugineus* (Lichtenstein).
58. GOLDEN EAGLE. *Aquila chrysaetos* (Linnaeus).
59. BALD EAGLE. *Haliaeetus leucocephalus leucocephalus* (Linnaeus).
60. PRAIRIE FALCON. *Falco mexicanus* Schlegel.
61. DUCK HAWK. *Falco peregrinus anatum* Bonaparte.
62. NORTHERN PIGEON HAWK. *Falco columbarius columbarius* Linnaeus.
63. AMERICAN SPARROW HAWK. *Falco sparverius sparverius* Linnaeus.
64. BARN OWL. *Aluco pratincola* (Bonaparte).
65. LONG-EARED OWL. *Asio wilsonianus* (Lesson).
66. SHORT-EARED OWL. *Asio flammeus* (Pontoppidan).
67. SOUTHERN SPOTTED OWL. *Strix occidentalis occidentalis* (Xantus).
68. CALIFORNIA SCREECH OWL. *Otus asio bendirei* (Brewster).
69. PACIFIC HORNED OWL. *Bubo virginianus pacificus* Cassin.
70. BURROWING OWL. *Speotyto cunicularia hypogaea* (Bonaparte).
71. ROAD-RUNNER. *Geococcyx californianus* (Lesson).
72. CALIFORNIA CUCKOO. *Coccyzus americanus occidentalis* Ridgway.
73. BELTED KINGFISHER. *Ceryle alcyon* (Linnaeus).
74. WILLOW WOODPECKER. *Dryobates pubescens turati* (Malherbe).
75. NUTTALL WOODPECKER. *Dryobates nuttalli* (Gambel).
76. RED-BREASTED SAPSUCKER. *Sphyrapicus ruber* (Gmelin).
77. CALIFORNIA WOODPECKER. *Melanerpes formicivorus bairdi* Ridgway.
78. LEWIS WOODPECKER. *Asyndesmus lewisi* Riley.
79. RED-SHAFTED FLICKER. *Colaptes cafer collaris* Vigors.
80. TEXAS NIGHTHAWK. *Chordeiles acutipennis texensis* Lawrence.
81. VAUX SWIFT. *Chaetura vauxi* (Townsend).
82. BLACK-CHINNED HUMMINGBIRD. *Archilochus alexandri* (Bourcier & Mulsant).
83. ANNA HUMMINGBIRD. *Calypte anna* (Lesson).
84. RUFOUS HUMMINGBIRD. *Selasphorus rufus* (Gmelin).
85. WESTERN KINGBIRD. *Tyrannus verticalis* Say.
86. ASH-THROATED FLYCATCHER. *Myiarchus cinerascens cinerascens* (Lawrence).
87. SAY PHOEBE. *Sayornis sayus* (Bonaparte).
88. BLACK PHOEBE. *Sayornis nigricans* (Swainson).

89. WESTERN WOOD PEWEE. *Myiochanes richardsoni richardsoni* (Swainson).
90. CALIFORNIA HORNED LARK. *Otocoris alpestris aetia* Oberholser.
91. YELLOW-BILLED MAGPIE. *Pica nuttalli* (Audubon).
92. BLUE-FRONTED JAY. *Cyanocitta stelleri frontalis* (Ridgway).
93. CALIFORNIA JAY. *Aphelocoma californica californica* (Vigors).
94. WESTERN RAVEN. *Corvus corax sinuatus* Wagler.
95. WESTERN CROW. *Corvus brachyrhynchos hesperis* Ridgway.
96. DWARF COWBIRD. *Molothrus ater obscurus* (Gmelin).
97. YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus* (Bonaparte).
98. BICOLORED BLACKBIRD. *Agelaius phoeniceus californicus* Nelson.
99. TRICOLORED BLACKBIRD. *Agelaius tricolor* (Audubon).
100. WESTERN MEADOWLARK. *Sturnella neglecta* Audubon.
101. BULLOCK ORIOLE. *Icterus bullocki* (Swainson).
102. BREWER BLACKBIRD. *Euphagus cyanocephalus* (Wagler).
103. LINNET. *Carpodacus mexicanus frontalis* (Say).
104. WILLOW GOLDFINCH. *Astragalinus tristis salicamans* (Grinnell).
105. GREEN-BACKED GOLDFINCH. *Astragalinus psaltria hesperophilus* Oberholser.
106. LAWRENCE GOLDFINCH. *Astragalinus lawrencei* (Cassin).
107. ENGLISH SPARROW. *Passer domesticus* (Linnaeus).
108. WESTERN VESPER SPARROW. *Poocetes gramineus confinis* Baird.
109. WESTERN SAVANNAH SPARROW. *Passerculus sandwichensis alaudinus* Bonaparte.
110. WESTERN GRASSHOPPER SPARROW. *Ammodramus savannarum bimaculatus* (Swainson).
111. WESTERN LARK SPARROW. *Chondestes grammacus strigatus* (Swainson).
112. INTERMEDIATE SPARROW. *Zonotrichia leucophrys gambeli* (Nuttall).
113. GOLDEN-CROWNED SPARROW. *Zonotrichia coronata* (Pallas).
114. WESTERN CHIPPING SPARROW. *Spizella passerina arizonae* Coues.
115. BREWER SPARROW. *Spizella breweri* Cassin.
116. SIERRA JUNCO. *Junco oreganus thurberi* Anthony.
117. CALIFORNIA SAGE SPARROW. *Amphispiza nevadensis canescens* Grinnell.
118. HEERMANN SONG SPARROW. *Melospiza melodia heermanni* Baird.
119. FORBUSH SPARROW. *Melospiza lincolni striata* Brewster.
120. SLATE-COLORED FOX SPARROW. *Passerella iliaca schistacea* Baird.
121. KADIAK FOX SPARROW. *Passerella iliaca insularis* Ridgway.
122. SAN DIEGO TOWHEE. *Pipilo maculatus megalonyx* Baird.
123. CALIFORNIA BROWN TOWHEE. *Pipilo crissalis crissalis* (Vigors).
124. BLACK-HEADED GROSEBEAK. *Zamelodia melanocephala* (Swainson).
125. WESTERN BLUE GROSEBEAK. *Guiraca caerulea lazula* (Lesson).
126. LAZULI BUNTING. *Passerina amoena* (Say).
127. WESTERN TANAGER. *Piranga ludoviciana* (Wilson).
128. WESTERN MARTIN. *Progne subis hesperia* Brewster.
129. CLIFF SWALLOW. *Petrochelidon lunifrons lunifrons* (Say).
130. BARN SWALLOW. *Hirundo erythrogastra* Boddaert.
131. TREE SWALLOW. *Iridoprocne bicolor*. (Vieillot).
132. NORTHERN VIOLET-GREEN SWALLOW. *Tachycineta thalassina lepida* Mearns.

133. ROUGH-WINGED SWALLOW. *Stelgidopteryx serripennis* (Audubon).
134. CEDAR WAXWING. *Bombycilla cedrorum* Vieillot.
135. PHAINOPEPLA. *Phainopepla nitens* (Swainson).
136. CALIFORNIA SHRIKE. *Lanius ludovicianus gambeli* Ridgway.
137. CALIFORNIA LEAST VIREO. *Vireo belli pusillus* Coues.
138. CALIFORNIA YELLOW WARBLER. *Dendroica aestiva brewsteri* Grinnell.
139. AUDUBON WARBLER. *Dendroica auduboni auduboni* (Townsend).
140. BLACK-THROATED GRAY WARBLER. *Dendroica nigrescens* (Townsend).
141. WESTERN YELLOWTHROAT. *Geothlypis trichas occidentalis* Brewster.
142. LONG-TAILED CHAT. *Icteria virens longicauda* Lawrence.
143. GOLDEN PILEOLATED WARBLER. *Wilsonia pusilla chryseola* Ridgway.
144. AMERICAN PIPIT. *Anthus rubescens* (Tunstall).
145. WESTERN MOCKINGBIRD. *Mimus polyglottos leucopterus* (Vigors).
146. CALIFORNIA THRASHER. *Toxostoma redivivum* (Gambel).
147. ROCK WREN. *Salpinctes obsoletus obsoletus* (Say).
148. SAN JOAQUIN WREN. *Thryomanes bewicki drymoeus* Oberholser.
149. TULE WREN. *Telmatodytes palustris paludicola* (Baird).
150. SIERRA CREEPER. *Certhia familiaris zelotes* Osgood.
151. SLENDER-BILLED NUTHATCH. *Sitta carolinensis aculeata* Cassin.
152. RED-BREASTED NUTHATCH. *Sitta canadensis* Linnaeus.
153. PIGMY NUTHATCH. *Sitta pygmaea pygmaea* Vigors.
154. CALIFORNIA BUSH-TIT. *Psaltriparus minimus californicus* Ridgway.
155. RUBY-CROWNED KINGLET. *Regulus calendula calendula* (Linnaeus).
156. WESTERN GNATCATCHER. *Polioptila caerulea obscura* Ridgway.
157. DWARF HERMIT THRUSH. *Hylocichla guttata nanus* (Audubon).
158. WESTERN ROBIN. *Planesticus migratorius propinquus* (Ridgway).
159. NORTHERN VARIED THRUSH. *Ixoreus naevius meruloides* (Swainson).
160. WESTERN BLUEBIRD. *Sialia mexicana occidentalis* Townsend.
161. MOUNTAIN BLUEBIRD. *Sialia currucoides* (Bechstein).

## GENERAL ACCOUNTS OF THE BIRDS

### WESTERN GREBE. *Aechmophorus occidentalis* (Lawrence).

The Western Grebe is not of common occurrence anywhere within the region covered by this paper. Hunters tell of the occurrence of this Grebe during the winter months on some of the larger sloughs. This species may possibly breed in the vicinity of Summit Lake, especially in seasons of high water. The fact of its remaining through the summer on Tulare Lake and Buena Vista Lake, in Kern County, would indicate that it is not averse to climatic or other conditions in the valley.

June 8, 1912, Mr. J. Eugene Law and the writer observed what we felt quite certain was a Western Grebe near White's Bridge. All the lower areas in the pasture of the great Chowchilla Ranch lying along the north side of the road were inundated by the overflow from several sloughs. As we drove along the grade the bird, at first sight taken for a cormorant, was seen to fly across the road and plunge into a pond probably two hundred yards away. It swam with arched neck and bill pointing upward at quite an angle, frequently diving and remaining under for several seconds. There seemed no way of approaching it more closely but we watched it for some time through a powerful glass and agreed that it was, with very little doubt, a Western Grebe. The silvery white underparts and long pointed bill seemed sufficient characters upon which to base our identification.

### PIED-BILLED GREBE. *Podilymbus podiceps* (Linnaeus).

Grebes of any kind seem scarce anywhere within the Fresno district and those that do occur are so secretive and retiring that they are not often seen, especially in the summer months. Personally I have only found one nest. That one was probably rendered unfit for occupancy through my desire to be certain that no eggs were buried in the mass of decaying vegetation composing it. This material floated, partly submerged, in two feet of water in a small tule pond six miles east of Clovis. The date was June 9, 1908. My disturbing the nest was not the only fatal circumstance, for a subsequent visit showed the pond to be drying up, and no Grebes were to be found.

A small grebe is known to occur in winter on some of the ponds and sloughs, but I am not prepared to say whether it is this species or the American Eared Grebe.

### CALIFORNIA GULL. *Larus californicus* Lawrence.

This Gull is a winter visitant to many of the larger sloughs along the western border of the Fresno district, being most often noted in the region northward from Summit Lake. I have never noticed any tendency for it to assemble in large flocks, companies of even four or five being much less common than single birds.

November 28, 1904, a gull was examined near the artesian well twenty miles southwest of Fresno. It had evidently been shot by hunters some days previous to my visit to the lake.

### FORSTER TERN. *Sterna forsteri* Nuttall.

This species was noted in large numbers the last week in June, 1902, when thousands of acres of pasture land and not a few grain fields were inundated by

a sudden rise of water due to melting snow in the mountains. The water was distributed for miles over the level country near New Hope, and produced a condition very favorable to many species of water birds. Probably *Sterna forsteri* nested abundantly, but no attempt to prove this was made, because of the difficulties in the way.

June 8, 1912, Mr. J. Eugene Law and the writer observed a number of these splendid terns flying over the overflowed sloughs four miles east of White's Bridge. They were flying singly and at no great height, frequently poising for a drop to the surface of the water. In each case the bird was flying northward and was not long in sight.

**BLACK TERN. *Hydrochelidon nigra surinamensis* (Gmelin).**

The Black Tern is of regular occurrence during the summer wherever suitable places can be found. June 28, 1902, great numbers of them hovered, screaming, over the thousands of acres of overflowed land near New Hope. From their actions I felt certain that they were breeding, but had no means of investigating.

Mr. Chester Lamb found this species breeding near Laton, in the southern part of the county, May 31, 1910, and collected from a small mud island a set of three eggs, together with an elaborate wild-oat nest. This nest, he stated, was far more bulky than the frail accumulation of dry grass that composed the nests of a colony of Black Terns that he found near Los Baños, in Merced County, during the preceding week.

May 11, 1908, I heard the cry of this species near Clovis and was surprised to see three of the birds flying over the vineyards, far from any pond. They tacked, dipped, and flapped along, making their way with nighthawk-like flight against the strong wind that then prevailed.

May 30, 1912, a colony of these handsome little terns was occupying a broken-down patch of last year's tules in an overflowed pasture near Firebaugh. With a glass several of the birds could be seen sitting on nests amid the floating dry tules. A swiftly flowing canal intervened and time did not permit of an attempt at a closer inspection of the nests. As there were several acres of these tules it is probable that quite an extensive colony was nesting there, but not over half a dozen birds were in sight at one time as they skimmed over the shallow water.

Sometimes in late July a number of these terns may be seen around some of the ponds southwest of Fresno where they are not known to breed. As the birds are usually in the mixed plumage of the immature it seems probable that these are young-of-the-year that are shifting for themselves and have wandered away from the place where they were raised.

**FARALLON CORMORANT. *Phalacrocorax auritus albociliatus* Ridgway.**

Cormorants are of common occurrence during the winter on the large sloughs southwest of Fresno. I have observed them perched on dead branches above the water in true cormorant style, or swimming with their bodies submerged and only the long snake-like necks appearing above the water. When disturbed they would often dive and remain under water for several seconds, to appear again many yards from where they went down.

These cormorants disappear during the summer, doubtless to join a breed-

ing colony at some more favorable point. Possibly the rookery described by Goldman (CONDOR, x, 1908, p. 201) includes the winter birds from this place.

It is highly probable that certain individuals that are for some reason non-breeders remain with us all summer; for I have observed cormorants along certain sloughs as late as the first week in June, and May 15, 1912, nine were seen flying together. This was not far from White's Bridge, and I have thought that somewhere on the great Chowchilla Ranch there might possibly be a breeding colony as yet unknown to the naturalists of this part of the state.

WHITE PELICAN. *Pelecanus erythrorhynchos* Gmelin.

Near Summit Lake one late October day the writer concealed himself behind a levee to await the approach of what appeared to be a flock of geese. "Pelicans," called my companion, and his identification proved to be correct. There were over two hundred birds in the three flocks that were seen on that occasion, and to the writer, who was then unacquainted with any of our waterfowl, they were objects of wonder and admiration as they passed over at no great height in regular formation and with a slow dignified flight. That was ten years ago, but the White Pelican still occurs through the winter over most of the slough country northward from Summit Lake.

November 29, 1904, a flock of about fifty was seen near New Hope. December 5, 1905, near the lake at the Artesian Well, a similar flock was seen flying over. April 6, 1906, another assemblage was noted circling about overhead on the plains not far from the present site of Raisin.

The species is reported to breed in numbers, during some seasons at least, at Tulare Lake, some fifty miles south of us.

RED-BREASTED MERGANSER. *Mergus serrator* Linnaeus.

The "Fish Duck," as this species is commonly known to hunters, occurs on many of the larger sloughs during the winter season. Nearly everyone realizes that this duck is of no value for the table and it is seldom molested, except by that class of hunters who draw the line at no living creature that affords a mark to shoot at.

Generally two mergansers are observed together, flying over with strong wing strokes, or quietly fishing in some secluded bend of a slough.

MALLARD. *Anas platyrhynchos* Linnaeus.

Mallards are probably the most common breeding ducks of this part of the valley. Some years, when conditions are favorable, they nest in large numbers on the west side sloughs and marshes, their abundance or scarcity during the following winter depending, seemingly, upon the number that are raised here rather than migrants from the north. Sometimes when several hard rain storms follow one upon the other, a great many small puddles are formed in the heavy clay soil east of Clovis. Occasionally a Mallard or two can be found on these puddles, especially during December or January. Some of the larger ponds, caused by the overflow from a flume, occasionally shelter a pair of these ducks all through the summer.

June 26, 1906, two companions and myself noticed a female Mallard in a large ditch, acting in a rather strange manner, and we at once suspected that a brood of young ducks was concealed near by. A few minutes' search revealed

three or four of the little fellows hidden in the tall grass at the water's edge. One of these that was captured, was about the size of a full-grown teal, and though apparently fully feathered he seemed unable to fly. Upon being released the duckling lost no time in getting out of sight, and a party passing the place a moment later would never have suspected the presence of a duck near that ditch.

The Mallards will undoubtedly be the last ducks to become extinct in this part of the state. The presence of an abundance of water is not one of their requirements and isolated pairs sometimes nest in alfalfa fields where the nearest water may be a small irrigation ditch nearly a quarter of a mile away.

The writer has observed Mallards during the summer months in almost every part of the valley, from the tule ponds southeast of Fresno to the sloughs near White's Bridge, while in the winter they have no less wide a range, depending upon the amount of rainfall and the consequent number of ponds.

BALDPATE. *Mareca americana* (Gmelin).

"Widgeon" is the common local name of this duck. It is a winter visitor, arriving in October. It then frequents the sloughs and larger bodies of water in good-sized flocks. At times a few individuals are seen to accompany flocks of Pintails. A few of these ducks pass the winter on the San Joaquin River near Lane's Bridge

The whistled "whee, whee, whee," produced by this bird's wings in flight often serves to identify the Baldpate when the bird itself cannot be seen.

GREEN-WINGED TEAL. *Nettion carolinense* (Gmelin).

This little duck is one of the first of the family to arrive in the fall and is, on the whole, probably the most abundant species in the valley. It frequents the small mud holes and tule-bordered ditches rather than large sheets of open water. Some winters the Mallard far outnumbers this teal, and again the Widgeon or Pintail seems to hold the most prominent place; but the number of Green-winged Teal does not seem to vary greatly from year to year.

CINNAMON TEAL. *Querquedula cyanoptera* (Vieillot).

As a summer visitant this handsome little duck probably ranks next to the Mallard in abundance and has almost as wide a range. In certain seasons it is probable that it even outnumbers its larger relative; but unlike the Mallard it does not seem to be at all common in winter.

January 10, 1912, I was shown a beautiful male Cinnamon Teal that had been shot from a flock of about a dozen individuals found in a small muddy puddle near Riverdale. The hunter who secured this duck informed me that in nearly fifteen years experience it was the first time, so far as he could remember, that this species had been seen at that time of the year. The birds usually make their first appearance in February.

In May and June one or two pairs of these ducks are usually to be found about any pond or slough that will afford concealment. They doubtless breed along many of the west side sloughs and probably within seven or eight miles of Fresno, as a few pairs remain all through the summer on the ponds at the city sewer farm.

The nest that was examined in May was simply a slight hollow picked bare of grass and unlined. It was situated in a thick clump of grass on a small island

in one of the sloughs near White's Bridge. As the female bird had not yet commenced to lay, it is probable that the nest would have presented quite a different appearance a couple of weeks later. But a sudden rise of water in the slough completely inundated the little island with its clump of grass.

None of our other ducks show the fearlessness of these little fellows, it being no difficult feat, often, to approach to within a few yards of a pair. They swim slowly away, keeping close to shore and refusing to separate, even when finally compelled to seek safety in flight.

SHOVELLER. *Spatula clypeata* (Linnaeus).

"Spoonbills" are common winter visitants to the shallow ponds and sloughs in the valley. They do not go about in large flocks, but small companies may often be found associating with various other ducks. Although never present in great numbers, the Shovellers are always in evidence and sometimes make up the major portion of the bags secured by hunters. This duck and the Green-winged Teal fall easy prey to the market hunters and fully three-fourths of the ducks noted in the meat markets here have been of these two species.

PINTAIL. *Dafila acuta* (Linnaeus).

A very common and much sought-for duck, occurring throughout the winter in large flocks. Over all the west side marshes and on the many sloughs that cut through the country around Wheatville this species is to be found in goodly numbers. Reports of "Sprigs" nesting have come in at times.

WOOD DUCK. *Aix sponsa* (Linnaeus).

Personally the author has not observed this duck, but it has been mentioned time and again by hunters who state that it is occasionally met with, though to be considered rare. It seems to occur most often in the wooded swampy region to the south and east of Wheatville. Mr. Joseph Sloanaker observed a pair of Wood Ducks in the river near the bridge at Reedley, in the latter part of April, 1910. Not infrequently a specimen of this duck finds its way into a local taxidermist's shop.

REDHEAD. *Marila americana* (Eyton).

Apparently not very common. The author has never seen but two birds, and the hunters with whom I have talked state that they meet with it only occasionally. A friend shot one on a small pond near the Artesian Lake, December 2, 1904.

Rumors have come to me of the breeding of this duck at several points in the valley, particularly in the vicinity of Firebaugh, and there seems no good reason for discrediting such rumors when one is familiar with the nature of the country in that part of the valley.

RUDDY DUCK. *Erismatura jamaicensis* (Gmelin).

These little ducks are often seen in winter on almost any pond that is of sufficient size to allow them to keep out of gun range. They are most often seen in flocks of ten or twelve, swimming in a rather compact company and reluctant to take wing unless compelled to do so, when their flight proves to be strong and very rapid.

On several occasions I have seen a flock of these ducks swim about indif-

ferently while several ineffective shots rained pellets all around them. This duck is often called "Pintail" by the hunters.

• LESSER SNOW GOOSE. *Chen hyperboreus hyperboreus* (Pallas).

White geese swarm by thousands on the west side plains. No record has been obtained of their date of arrival in the fall, but as late as April 7 (1906) they were congregated in large numbers on several hundred acres of grassy pasture near the Artesian Lake. Just before sundown, as I drove past, the ground was white almost as far as one could see and the noise was deafening. I have not had an opportunity of measuring any of these geese, but there appears to be a great variation in size. During January large flocks of Snow Geese move restlessly about, flying at a great height, and generally travelling toward the north.

WHITE-FRONTED GOOSE. *Anser albifrons gambeli* Hartlaub.

Less common through the winter than the white geese, this bird, which inhabits much the same country, is nearly always in evidence on account of its loud, clear call notes. This species is sometimes found along the sloughs in October, and remains, in some instances at least, until the second week in April. During periods of stormy weather they often fly over in large flocks, apparently with no definite object in view other than a change of feeding grounds. Their cry is often heard at night, especially during moonlight evenings.

CANADA GOOSE. *Branta canadensis canadensis* (Linnaeus).

Under this heading I have placed all the large "honkers" found in this part of the San Joaquin Valley. After examining not a few geese in the markets and in the possession of hunters, I have concluded that the race *occidentalis* either does not occur as commonly as supposed or that its validity as a subspecies is rather questionable. I have never yet seen a bird that would fit the book descriptions of that form.

No doubt there are persons who have access to a sufficiently large series of specimens to enable them to work over this group thoroughly and if necessary name one more subspecies to make provision for those individuals that are not quite typical of either *canadensis* or *occidentalis*. After all, though, would it not be a much more satisfactory solution to adopt the nomenclature of the market hunters and simply call them all "honkers." Happy is the man who is not concerned about the presence of one or two black feathers properly placed!

Wherever large open grain fields are to be found, especially if they are not too far removed from some river or large body of water, these geese may be looked for at any time during the winter. In stormy weather they often roam around in large flocks or small detached companies. This species departs earlier in the spring than the White-fronted or Snow Geese and have usually all left the valley by the middle of March.

It seems a pity that these splendid birds cannot adapt themselves to a changed environment and thus defer that day when we will no longer be able to number them among the birds of the Fresno district.

HUTCHINS GOOSE. *Branta canadensis hutchinsi* (Richardson).

These small geese, known to hunters as "China Geese" or "Little Honkers,"

range over much of the same part of the valley as their larger relative, but usually go about in larger flocks and are more noisy.

As yet this species returns to us in large numbers each winter, but upon every return visit they find a more restricted feeding range and a greater army of hunters in the field; so it is only a matter of a few more years until this species, together with most of our large game birds, will have disappeared from this part of the state.

Farmers complain of the damage done in grain fields by these and other geese, and as the birds are not protected at any time during their winter sojourn with us they are often slaughtered in large numbers by market hunters and others.

Ten years ago when much of the country northeast of Fresno was given over to grain ranches these geese were seen very often and were sometimes noted in large numbers during late March when the spring migrations began; but during the last four or five years I have not seen half a dozen flocks anywhere east of the city.

FULVOUS TREE-DUCK. *Dendrocygna bicolor* (Vieillot).

Mr. J. Eugene Law furnishes the following notes regarding this species:

"On June 7 (1912) while on the Murphy Slough, on the Burrell Ranch (28 miles southwest of Fresno), I three times saw Fulvous Ducks, twice a pair and the other time three individuals. These were flying quite close to me and apparently settled only a little ways off among tules. At this time the water was overflowing the low lands having been on the rise for some time. The birds had not been observed during the five days previous during which time I had been in this vicinity."

These ducks are known to occur quite commonly over much of the region from Firebaugh northward, wherever suitable water occurs, and have been frequently recorded from the vicinity of Los Baños.

Mr. Law writes me further as follows: "On the 13th (June, 1912) while en route between Dos Palos and Los Baños, I think a mile or so above Dos Palos, these birds were really abundant, every little pond having two or three individuals and sometimes several little groups. At one time I saw six birds together on the wing. I noted also that they have a peculiar un-duck-like metallic call repeated rapidly as they are settling in the water or rising, which was quite new to me. Nothing that I saw would indicate that the birds were nesting at this time and the fact that there were as often three together as two might indicate that the birds observed were all males. I suppose that I saw as many as twenty-five or thirty birds during the couple of hours I spent near Dos Palos. There were, at a short distance, beds of very rank tules which would, I imagine, make proper nesting places for these birds."

WHISTLING SWAN. *Olor columbianus* (Ord).

In former years swans occurred in some numbers wherever large bodies of open water offered an inducement to spend a part of the winter. The flocks usually numbered ten or twelve birds each.

I have been informed that fifteen years ago it was no uncommon sight to

see one or two of these birds hanging up in the meat markets. There is a mounted specimen in a local taxidermist's shop, evidently prepared many years ago. At present swans are rarely seen and in a few years more will doubtless vanish forever.

WHITE-FACED GLOSSY IBIS. *Plegadis guarauna* (Linnaeus).

The occurrence of this Ibis during July and August, sometimes in large flocks, has been noted throughout the marshy country near Wheatville. July 13, 1911, four individuals were seen flying over the water in a vast overflowed area.

August 23, 1908, two were seen flying over the vineyard near the Tarpey Ranch, northeast of Fresno. They were traveling toward the mountains, and as their appearance was noted early in the morning it is possible that they had flown out of their course during the night.

I do not know of any breeding colony in this part of the valley, but the species is known to breed near Los Baños, in Merced County. It would not be surprising if a colony were to be found in the tule swamps between Wheatville and Summit Lake.

May 30, 1912, large numbers of Ibis were seen feeding in flocks along the roadside north of Firebaugh. They gave little heed to a passing automobile, but flew up in confusion when a train passed. I should estimate the number of birds seen at not less than five hundred. As they fed over the soft muddy ground, probing with their long sickle bills, I tried to decide what of my avian acquaintances they most resembled. Their glistening bronzy plumage and dignified demeanor suggested a flock of turkeys, but certain of their actions were not unlike a flock of crows.

May 20, 1912, a lone Ibis was noted near a shallow salt-grass pond six miles southwest of Fresno. He had a lonesome, dejected attitude, as he stood humped up on the muddy bank paying no attention to the noisy Stilts that were nesting all about, nor to the two pairs of friendly little Cinnamon Teal that sometimes swam quite near. When too closely approached this Ibis gave a dismal cry and flew to the opposite side of the pond.

AMERICAN BITTERN. *Botaurus lentiginosus* (Montagu).

The Bittern appears to be a fairly common resident of the swampy areas near Wheatville. December 2, 1904, two individuals were seen, one in a thick growth of marsh grass and cockleburrs, the other being flushed from some small willows along a dead slough. December 6, 1905, another one was seen, and April 7, 1906, a fourth specimen was observed.

July 13, 1911, while enjoying an automobile trip through the west side country, I observed a Bittern standing in the mud in a small sink, where her only companion was a cow. Upon passing the same place a couple of hours later the bird was seen crouching beside a large tuft of grass, looking intently at the muddy water. As a rule this bird is not so willing to be observed.

Some boys once gave me two eggs that were unquestionably those of the Bittern. They had found two nests, late in June in a large pasture, the nests being built in the rank grass not far from a slough. Five eggs were said to be the complement in each case.

LEAST BITTERN. *Ixobrychus exilis* (Gmelin).

So far as I have been able to learn this little Bittern is not at all common, even in the swampy areas. Few people seem to know it. Perhaps its habit of keeping concealed accounts for its apparent rarity, in some measure, at least. The author saw a single individual near Wheatville the first week in May, 1900.

GREAT BLUE HERON. *Ardea herodias herodias* Linnaeus.

Probably no other bird in central California receives the attention from a disinterested public that this splendid species does. Known to nearly everyone as "Crane," "Blue Crane," "Gopher Crane," or "Fish Crane," it seems fortunate that the impression prevails everywhere to the effect that this bird is strictly protected, and that to kill one would be about on a par with shooting a Turkey Vulture. If it were not for this fact the herons would have long ago disappeared from the valley.

The farmers of this county should do all in their power to afford protection to the Blue Heron, as it is one of the best gopher destroyers in existence. It is no uncommon sight to see a heron standing motionless for hours at a time in an alfalfa field waiting for a gopher to make its appearance. Small fish, frogs, and probably lizards, if they are obtainable, are eaten, and on many occasions herons have been observed in pairs on the dry barren hillsides along the San Joaquin River busily engaged in catching grasshoppers. Ability to adapt itself to changing conditions and a varied diet has caused this bird to become widely diffused throughout the valley, and has, no doubt, assisted materially in preserving the species.

Great Blue Herons formerly nested, and probably still do, in some large sycamores near the river below Friant. Mr. Chas. E. Jenney reports two sets of eggs, numbering four and five respectively, taken on March 31 several years ago. Rumors have come to me of a large present-day colony that nests in a grove of eucalyptus trees rather indefinitely located as "north of Raisin City," but the exact location seems to be unknown.

April 12, 1902, the author found a colony of nine pairs occupying a large lone cottonwood that stood on the bank of Fish Slough near New Hope. At least three of the nests contained sets of four and five eggs each, all far advanced in incubation, while three other nests held small young. Of the contents of the three remaining nests nothing certain could be learned, as they were almost inaccessible. All these nests were large, well-hollowed platforms strongly built of sticks and placed from forty to sixty feet above the ground.

Whether standing in solitary dignity in some shallow slough spearing for pollywogs, or settling in large numbers knee-deep in the overflowed fields where he has but to pick up of the abundance of food all about him, the Great Blue Heron is one of the most imposing and attractive sights of the bird life in Fresno County.

ANTHONY GREEN HERON. *Butorides virescens anthonyi* (Mearns).

The Green Heron is a common migrant throughout the valley, wherever suitable conditions exist. It has been observed along the flume ponds well up into the foothills east of Clovis, among the willows that border the San Joaquin River north of Fresno, and along many of the ditches near the city; while the

center of its abundance seems to be the over-flowed swampy areas near Wheatville.

Late in May, 1908, a dam was thrown across a certain large irrigation ditch near Clovis and a new ditch formed almost parallel to the old one. Just enough water leaked through the head gate to keep the water in the original ditch from lowering noticeably; but as there was no outlet it soon became stagnant under the warm sun and before many days seemed alive with frogs and small fish. Although a Green Heron had never been seen along this ditch previous to that time, yet the writer soon became aware of the presence of a couple of timid, awkward birds that flapped noisily from willow to willow, all the while giving voice to a series of guttural squawks, grunts, and croakings.

A careful search on June 13 along the half-mile fringe of willows resulted in finding a thin, frail, platform nest built on a small horizontal branch, almost at its extremity, and sixteen feet above the water. On this saucer-shaped structure of long, dry, wire-like twigs the owner was covering four very slightly incubated eggs. Not until I had climbed half the distance to the nest did the bird leave and then she perched nearby and occasionally barked her disapproval.

The second nest of this pair of birds, built after their first set had been removed to the author's collection, was found on June 28 in a tree scarcely fifty yards from the first one. This nest held three eggs and was about thirty feet from the ground. July 9 this bird was patiently incubating, and from the appearance of the nest a couple of months later I felt sure that a family of young herons were successfully raised in it.

BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax naevius* (Boddaert).

A common resident throughout the valley, occurring in large numbers over the marshy areas and found singly or in small companies wherever an old dead slough or ditch occurs. This species seems to prefer the vicinity of stagnant or muddy slow-flowing water, rather than the clearer, more rapid ditches.

There was at one time, and probably still is, a large breeding colony in the willows that border Fish Slough near New Hope. The farmers in that region irrigate large tracts of grain and alfalfa, using water from the slough, and often when the water is turned out there will be thousands of carp and other fish left on the ground. To this wriggling, squirming feast the herons swarm by hundreds, and it is probably the presence of such an abundance of food during the summer that has brought together the large nesting colony at this place.

SANDHILL CRANE. *Grus mexicana* (Müller).

It seems quite reasonable to suppose that both the Sandhill and Little Brown cranes occur at times in the Fresno district; but the great majority of the host of our winter visitant cranes are *mexicana*, and the few specimens that I have had an opportunity to examine measured well beyond the maximum for *canadensis*.

Our cranes first arrive in September and are fairly common in suitable places all through the winter, beginning their northward flight sometimes by March 20, but usually not until the first of April. Two or three weeks are required for all the flocks to have gotten safely under way on their long journey, and I have sometimes suspected that certain individuals occasionally remained all

summer. I saw three cranes not far from Lillis as late as May 3, 1900. The height at which these migrating cranes fly on clear warm days is almost incredible and the number that pass over in a single day is not less remarkable. The past season (1912) showed a very early migration, many flocks of cranes passing over March 17.

VIRGINIA RAIL. *Rallus virginianus* Linnaeus.

A fairly common resident of suitable areas, but not often seen on account of its seclusive habits. It has been noted in the overflowed districts of the Wheatville region, and among the grass and sedges of shallow sloughs along the San Joaquin River near Riverview. On October 14, 1910, a fine male was found dead in the yard of a residence within the city limits of Fresno. This specimen is now in the collection of Miss Winifred Wear, of this city.

FLORIDA GALLINULE. *Gallinula galeata* (Lichtenstein).

Florida Gallinules appear to be quite generally distributed over the valley, but are nowhere as much in evidence as their near relatives, the coots. In point of numbers the mud-hens have all the best of it, although the gallinules' secretive habits may have something to do with the apparent scarcity of the species in some localities. The local name "red-billed mud-hen" would seem to be an appropriate one for this bird, as the red bill is a distinguishing mark as far as the bird can be seen.

November 26, 1907, two gallinules were seen on a pond near Letcher about twenty-five miles northeast of Fresno. Although well up into the foothill region and somewhat out of the range covered in this list, yet the record was thought worthy of note in the present paper, especially since the species was subsequently seen not far from the same place and may be a permanent resident there.

April 19, 1908, a gallinule arose from a small pond at the roadside, walked across the road and disappeared among the cat-tails and wire grass. This was near a series of small ponds caused by the overflow of a flume and although conditions seemed very favorable for the breeding of these birds I could find no nests, and on later visits the birds were not to be found. These ponds were about seven miles east of Clovis and the same distance from the locality of the first record. I had seen a single bird near the same place on the seventh of the preceding March.

May 20, 1912, a gallinule was observed quietly swimming in a pond at the edge of a dense patch of tules in one of the numerous salt grass pastures six miles southwest of Fresno.

This species is known to breed in the swampy overflowed region near Firebaugh.

COOT. *Fulica americana* Gmelin.

An abundant resident in suitable places throughout the valley. All the overflow land south of Wheatville, the swamps and sloughs along the west side, and the smaller tule-bordered ponds nearer the city seem to be equally suitable.

A local gun club that has its preserve in Merced County frequently holds a "mudhen shoot" at the opening of the duck season, and the members report having killed as many as five thousand coots in a day.

This bird sometimes strays away from water and seems to become confused

rather easily. Late one summer a mud-hen was found in a peach orchard two or three miles from any water and as it seemed unable to take wing from a ground start it was easily captured. When thrown into the air its flight was rapid and strong but hardly graceful.

This species must begin nesting rather early in favorable seasons as young birds have been seen as early as the first week in April.

May 30, 1912, a Coot was seen occupying a floating nest on a comparatively open sheet of water near Firebaugh. No doubt there were many others nesting in the cat-tails nearby, but this bird was living in a houseboat that was visible from any direction. Had this ark been untenanted it might have passed for one of the many bits of floating drift and dry tules, but with a large bluish bird, with a distinctly white bill, perched upon it there was no mistaking it even at a distance.

In spite of their clumsy ugliness mudhens are interesting creatures, especially when they assemble to feed, like chickens, upon the grass, sometimes at some distance from their favorite pond. It is their voracious appetites that have led to their downfall, however; for the hunters claim that the grain placed about ponds to entice ducks and geese is devoured by the hungry coots, and for that reason a reduction in the numbers of the mudhen host often seems desirable from the sportsman's point of view.

NORTHERN PHALAROPE. *Lobipes lobatus* (Linnaeus).

While there seems little reason to doubt the more or less frequent occurrence of phalaropes in favorable places in the valley during migrations, yet the writer has observed but a single bird and that one was noticed so late as May 20, 1912. On that date I was looking through a colony of nesting stilts in a salt-grass pasture near a pond six miles southwest of Fresno. A phalarope was swimming about most unconcernedly in a neck of the pond. Naturally I watched him with much interest and finally walked up to within less than thirty feet of him when he flew a short distance and again settled on the water not far away. Later in the day I happened to be passing the same place but the bird was not to be seen. No doubt this was just a hungry migrant that had stopped over for a few hours to feed in so attractive a pond.

It may seem like a dangerous proceeding for one confessedly unfamiliar with this class of birds to name the species from merely seeing a single individual; but in this case the bird was clearly seen and carefully compared with the book descriptions.

AVOCET. *Recurvirostra americana* Gmelin.

Shallow, muddy, alkaline ponds surrounded by rolling, salt-grass prairie, seem to exactly suit the requirements of this wader, and these conditions are met with at many points along the western part of the county from Wheatville to Mendota. Mr. J. H. Pierson of this city observed a number of avocets near the latter place on May 27, 1911, sitting on their eggs. They were nesting on little islands that stood a few inches above the water. At other places they nest on the bare ground among the patches of salt grass.

April 6, 1906, seven pairs of "yellow snipes," as the ranchers often call them, were observed in the shallow water at the Artesian Lake. Their subdued cry, not

unlike a whistle, was heard before the birds were seen. This note was uttered unceasingly as the birds stepped about, bowed, and continually dipped their bills into the water. One of these birds was still in his winter dress and looked almost like an albino, in rather striking contrast to the other thirteen which had assumed their full breeding plumage; but the odd bird appeared to be enjoying the sport as much as any of them.

I have always thought that this species showed a marked preference for the most stagnant and uninviting ponds. Several such places that the writer occasionally visits are to be found a few miles south of Caruthers, and although the water is sometimes so foul as to be almost black yet the Avocets gather there in some numbers. About the borders of these ponds may sometimes be found myriads of flies that seem to be attracted by some substance floating just at the water's edge. It seems not improbable that these flies form one of the staple articles of diet for the Avocets at this season.

I have mentioned the, to me, remarkable instance of Avocets being seen on their nests while the observer drove past in an auto; but I have never been able, by any strategy, to discover an Avocet upon her nest, except in just one instance. On this occasion I concealed myself in a ditch and waited until with the aid of a glass a bird was finally seen to go to her nest. Three others that appeared to have resumed the duties of incubation were found to be sitting on the bare ground their fears having evidently not been entirely allayed. In fact I know of no birds whose nests are so hard to discover.

Always on the alert it is nothing unusual for one of these big fellows to come out to meet the naturalist before he has approached to within a half-mile of a nesting colony. The presence of a man anywhere within two hundred yards is sure to call out half a dozen angry birds that fly over with peculiar stiff flight, and with long bill pointing in one direction and the still longer legs stretched out full-length in the opposite. "Pleek, pleek, pleek," they scream as they dart at an intruder in a most threatening manner.

Near Firebaugh on May 30, 1912, I found Avocets and Stilts nesting near a large, shallow, muddy pond near the railroad, and it was there that the one instance of an Avocet being seen on her nest was noted. Nests of Stilts vary wonderfully in amount and variety of nesting material used; but our Avocets seem to have adopted one style of architecture almost exclusively. The typical nest is little more than a shallow depression in the earth with no lining whatever *under* the eggs but with quite a substantial rim *around* them so that it may be said to resemble a large, loosely built, and much flattened blackbird's nest with the bottom removed. One is given the impression that this nest might have been hastily woven together, carried for some distance and set down over the four large pointed eggs with the idea of fencing them in rather than of affording a comfortable nest for the young.

Sometimes the great clay-colored eggs are so plastered with mud from the feet of the sitting bird as to resemble clods of earth. While this is probably not an act of precaution on the part of the birds yet it certainly serves to make the nests much more inconspicuous.

**BLACK-NECKED STILT. *Himantopus mexicanus* (Müller).**

To every true lover of birds there comes, at some time during the first six

months of the year, a flood tide of enthusiasm that usually presages a red-letter day in the fields or woods. To some this comes when February gives us a succession of warm sunny days, and sooner or later a trip for Horned Owl's eggs is the result. Others may ward off February's magic spell only to go tramping away some blustery March morning in search of the aerie of a pair of Golden Eagles. Others still find an irresistible impulse drawing them away toward the hills just when the blossoming oaks suggest Bush-tits' nests or the glimpse of some rare migrant warbler. Thus we all have our favorite and the writer, who has often spent the first four months in oölogical idleness, suddenly in May falls a victim to that intangible something that draws men away from the cares and responsibilities of a business world.

Imagine a salt-grass pasture, a pond shimmering in the distance, the odor of alkali weeds, and half a dozen long-legged, black and white waders. Not an attractive scene the uninitiated would say, especially when viewed from a dusty roadside with the summer sun beating down mercilessly; yet the most pleasant days in my whole experience as a bird student have been spent around some such place.

The Black-necked Stilts arrive in the vicinity of Fresno about the middle of April, although the date of arrival seems to vary somewhat, and the first of that month in some seasons would find the birds already on hand. It is quite probable that certain pairs are either very tardy migrants or for some reason delay their nesting until long after the majority of the Stilts have begun to assume family cares. One season when in several colonies the date for complete sets of fresh eggs was about May 20, I was very certain that no Stilts were nesting about two ponds that I frequently visited. I was therefore considerably surprised to find a colony in possession of each of these ponds in Mid-June, the 13th to be exact, and a number of nests contained fresh eggs. This, however, is not sufficient proof of retarded migration in view of the fact that in some colonies where nesting began early a few birds could still be found that were incubating eggs up to the first of July. At this time large young were in evidence some of which were not distinguishable from their parents at a little distance. Unless in some manner molested I think it unlikely that more than one set of eggs is laid each spring, but I am convinced that in not a few cases the birds are compelled to make a second, and perhaps a third, attempt before they succeed in raising a brood.

As these nesting colonies of Stilts are invariably in pastures with cattle tramping everywhere over the fields, it seems almost a miracle that any of the eggs escape being destroyed; and yet I have not one iota of positive proof of such a disaster ever overtaking a Stilt's nest, while in many instances I have known the eggs to hatch safely almost under the feet of stock. It is known that few animals will purposely step on any living object of a size large enough to be noticed, and the writer is convinced that a Stilt simply remains on her nest and by her vociferousness and possibly even with a few vigorous thrusts of her long bill causes a grazing cow to direct her course away from the nest.

A lack of judgment causes many nests to be abandoned each year, and a colony of Stilts that are not able to distinguish between a permanent pond and one that has been caused by irrigation is liable to find that by the time sets of

eggs are complete the water has disappeared and a new nesting site must be chosen. Fortunately the larger colonies always seem to be located near the permanent ponds, but there are numerous scattering pairs that are deceived each summer.

Nesting colonies of these waders in the Fresno district are never very large, consisting of from six to twenty pairs, as a rule, the most extensive one of which I have any knowledge containing an average of about thirty pairs each season. Possibly the numerous small ponds will not support a great many birds, and as suitable pastures abound in certain sections it is not a difficult matter for all the birds to be accommodated without any crowding.

It is not an easy task to define the exact summer range of this species in the valley, as everything depends upon the presence of water. A winter of excessive rainfall, or a very dry one, may bring about results entirely unlike what would be found the spring following a season of normal rainfall. It may be said, however, that this species does not show such a decided preference for stagnant alkaline ponds as does the Avocet, and although a few Stilts are usually to be found with the Avocets in such places, the smaller birds are often found around the fresh water pools also, where their larger relatives are seldom seen.

Vineyards and orchards are for the most part shunned, as is shown by the fact that I have only two or three records for the country northeast of Fresno. One of these was a single bird that was seen flying over the vineyards near Clovis on April 30, 1905. The 16th of the following May a friend reported having seen three pairs of Stilts near Little Dry Creek, north of Clovis, and well into the foothills. In general, however, it may be said that this species is to be looked for wherever open treeless pastures with shallow ponds or sloughs are to be found, with an unmistakable preference at all times for the areas that are thickly carpeted with Bermuda grass. It has been known to breed near the Artesian Lake, along some of the sloughs and irrigation ponds near Wheatville, in the vicinity of Mendota, and from Firebaugh to Los Baños in a number of places. All through the pasture lands southwest of Fresno a few miles, the Stilts are common and sometimes abundant summer visitants.

I have often been surprised at the great diversity of nesting sites, even in the same colony, it being not an unusual occurrence to find nests entirely surrounded by water—little islands of mud and sticks often built up out of water several inches deep. Not less common are the platforms of dried grass placed just at the water's edge, or the slight excavations that, Killdeer-like, are placed on the bare ground a hundred yards or more from the nearest water.

In one colony the majority of the nests were built on a levee that extended through the pond and were so near the water's edge that, although most of the nests were quite elaborate platforms of dry grass and twigs, the lower parts of the eggs were wet. Undoubtedly a high wind would have caused the wavelets to break over the levee. At this same place there were several nests far out on the open dry ground without even a spear of grass for concealment or protection, and with hardly a vestige of nesting material under the eggs.

At one pond where two pairs had taken up summer quarters there was one nest on the bare black ground where the white breast of the sitting female was the most conspicuous object imaginable and could be seen at a glance from a dis-

tance of three or four hundred feet. In direct contrast was the other nest; for it was artfully hidden among the rather rank salt-grass some distance from the pond, and when the sitting bird flattened herself upon it, as is the custom of this species when endeavoring to escape observation, she might have readily been overlooked from any nearby point.

The actions of different pairs of Stilts when their nesting colonies are invaded are also variable. Sometimes a flock of noisy screeching birds will press close about the intruder, some hanging in the air on rapidly beating wings, others bouncing along the ground by leaps and bounds, raising and lowering their wings continually; while others go through every conceivable motion both on the ground and in the air. It seems that the larger the colony the more demonstrative the birds are; for in several instances where only one or two pairs were breeding the female would sneak from the nest in a guilty manner and quietly join her mate on the opposite side of the pond, where they would remain almost motionless or feed nervously along the margin of the pond.

In all the nests I have examined I have never found an unquestionably complete set of more or less than four eggs. I have been impressed with the fact that nearly every set has three eggs that are very similar in size, shape, or coloration, while the fourth egg differs greatly in one or sometimes all these points. This seems to suggest that possibly at one time the Stilts, or their ancestors, laid but three eggs, as some of the plovers do at the present time, the addition of the fourth egg being perhaps an accomplishment acquired at a more recent date.

I know of no other eggs that show such great variation in shape, size, and markings; the ground color varies from a delicate pale green to a rich buff, while the markings almost defy description being sometimes in the shape of small spots and again appearing as large irregular blotches with every possible intermediate type.

As the Stilts are seldom hunted and have very few natural enemies they do not appear to have decreased in numbers and should be able to hold their own for many years to come. Among the farmers the name "jack snipe" is usually applied to this species.

As these lines are written the nesting season has closed. Soon will the Stilts be making the journey to their winter home; but they will leave me three priceless gifts, two of which I may share with my friends, but the other, selfishly, I must keep to myself alone.

The pointed eggs, so curiously scrawled and blotched with brown and black, that nestle in a tray in my cabinet afford undoubted evidence of the nesting of this species and will be viewed with interest and profit by the friends who call from time to time to discuss things ornithological. Then, too, the field notes that have been taken show many side lights on the life history of this most interesting species. These notes can be published abroad and those naturalists whose lot is not cast in a region inhabited by Stilts may read something of their habits. The best gift of all, however, I cannot share with anyone. For graven indelibly on the tablets of memory, yet illegible to anyone else, are the recollections of many pleasant moments spent with my favorite birds; and through the long winter evenings I shall at times catch fleeting glimpses of twinkling ponds, of

salt-grass pastures with cattle standing in the shade of the lone cottonwood in the fence corner. I shall drink in the odor of salt grass and see again the long-legged, black and white waders that alone can make the scene complete.

I am looking forward even now to that day next spring when I can return from my day's work and triumphantly announce to the folks at home, "Our friends, the Stilts, have come!"

WILSON SNIPE. *Gallinago delicata* (Ord).

This bird appears to be not uncommon in suitable places in winter. Specimens sometimes find their way to a local taxidermist's establishment where they afterwards appear, standing on a board, and with a calm trustful expression survey the other specimens. To see them thus one would doubt that they could be the same species of which the writer once tried so hard to secure a specimen.

December 5, 1905, while driving along near Clovis my two companions and myself observed a pair of these waders poking about in some tules in a muddy ditch. When one of the boys approached the birds they separated and arose with a derisive "scaip," only to settle a few hundred feet away. This pair, at least, seemed in no danger so far as our party was concerned and as our supply of ammunition was not inexhaustible we finally drove on, none the richer in anything but experience.

Around the shallow ponds on the sewer farm these birds are often in evidence, especially late in the evening. They prefer to poke about in the salt-grass just at the margin of a pond, and when so occupied are not easily seen. Often the startling "squa-aik" as the bird twists away with strong, quick flight, is the first intimation that we have of the snipe's presence, and frequently the little brown wader is not the most surprised of the two when such a chance meeting takes place.

LEAST SANDPIPER. *Pisobia minutilla* (Vieillot).

Least Sandpipers appear in late September or the first half of October, and are found in flocks of from ten to thirty or more throughout the winter, departing about the middle of April. This species is to be looked for around the shallow, muddy ponds that occupy many of the low swales in the western half of the district. Stagnant alkaline ponds are at all times preferred as feeding grounds. I was greatly surprised on one occasion to hear a farm hand refer to these tiny waders as "jack snipes." I had always supposed that the Stilts held undisputed possession of that name.

Although so small these sandpipers are most interesting little sprites. They are usually to be seen running along over the mud at the water's edge, or, taking flight, they wheel and circle in a compact body.

GREATER YELLOW-LEGS. *Totanus melanoleucus* (Gmelin).

The writer has observed this species but once and that in a small swampy area near Clovis during a heavy downpour, March 30, 1904. One bird flew from near the roadside at my approach and alighted near another that I had not previously seen. Just as it settled to the ground the wings were held above the bird until their tips appeared to touch. As the two birds walked they were continually dipping and bobbing their heads.

Miss Wear reports seeing this species, together with what was thought to be the Lesser Yellow-legs, in some shallow ponds on Fig Avenue in April, 1909; and April 17, 1910, *melanoleucus* was observed near the same place.

LONG-BILLED CURLEW. *Numenius americanus* Bechstein.

On the plains between McMullin and the Artesian Lake this splendid bird is to be found in small numbers through the winter. November 29, 1904, during a dense fog I several times heard the melodious, inspiring whistle of this great wader and in the next few days three or four flocks of eight to ten birds each were seen; but they were so wild that a close approach was impossible.

Mr. Joseph Sloanaker informed me that curlews were present in the vicinity of Raisin during the winter of 1910-11, and that they could be approached in a buggy to within forty or fifty yards when a man on foot could not get nearer than twice that distance.

HUDSONIAN CURLEW. *Numenius hudsonicus* Latham.

Hudsonian Curlews are regular spring migrants in suitable places along the western half of the valley. They arrive in small numbers late in February and become more numerous a month later.

Their favorite resorts are large open fields where shallow ponds occur, and in such places they often gather in large numbers. I have no definite record of this species remaining in spring later than May 7 (1912), but have no doubt that a few remain much longer during certain seasons.

There are no birds with which I am acquainted that can compare with these splendid waders in the rich musical quality of their voices. On the last day of one April I encountered a large flock of curlews in a grain field, part of which was being flooded at the time with irrigation water. In one place there was an area of probably five acres that was covered with water to a depth of several inches. The surrounding higher ground supported a considerable growth of stubble left standing from the harvest of the preceding summer. Approaching to within sixty yards of the big fellows as they stood bunched at the water's edge, I concealed myself as best I could and enjoyed an opportunity to become better acquainted with those most interesting birds. The nervous lisps that at my approach threatened to break into the clamorous, screaming flight calls finally subsided and the birds fed and waded about in the water or preened their feathers while standing stork-like on one leg. Suddenly I was thrilled with a medley of subdued pipings so marvelously sweet and musical that I could hardly believe the sound came from my flock of curlews. The faintest whispering it seemed, yet the liquid melody was really far-reaching and was, as I afterwards learned, distinctly audible from a distance of a quarter of a mile when atmospheric conditions were favorable. A strange nervous unrest seemed to affect the entire group on the ground. The whistlings became louder and the cause was suddenly revealed to me when a curlew call from overhead drew my attention to a flock of new arrivals, nine in number, that were circling preparatory to joining the company at the pond. My surprise and admiration knew no bounds when I realized the sublime heights at which these travellers through the sky had been flying. Mere specks they appeared, and yet their melodious call rang clear and distinct.

It seems possible that Nature has endowed some of her children with a sense unknown to us by which certain creatures can detect the presence of others of their kind at great distances. It seems that eyesight alone could hardly be sufficient to reveal to a flock of birds poking about in the mud the approach of others at a distance so great as to be almost undiscernible to human eyes, even when their location had been fairly well determined by the splendid call notes. However, time and again I have heard this subdued piping and in every case a new flock of birds appeared, although in some instances it was nearly a minute before the newcomers could be located. The Sandhill Cranes sometimes fly at astonishing heights during the spring migrations, but I think it not unlikely that many flocks of curlews pass over so far above the earth as to be entirely invisible.

There is a wild and not unmusical tone in the clamorings of a frightened flock of these birds as they fly from a real or supposed danger, the big assemblages breaking up into small squads that scatter in all directions. There is also a most attractive quality in the inspiring whistle of a single individual as he takes flight from a shallow slough where he has been feeding. To the writer there is nothing in all the bird world so musical as the excited yet subdued whisperings of the Hudsonian Curlews when a new company of fellow travellers have been sighted.

It must not be supposed that these birds spend their entire time around water; for small groups of from six to twelve or more individuals are often encountered out in dry fields or pastures some distance from any water. Yet the trysting pond is sure to be not many miles away, and at any time the little groups are liable to cease feeding operations and betake themselves to the place of assembling.

At first thought it seems regrettable that these birds should nest in the far north and therefore be with us for only a few weeks in spring on their northward journey. Yet it is probably best that it is so; for there are many people in California who assert that curlews make excellent birds for the table and no doubt many would perish by the shotgun if the birds were to be found here throughout the year. May their numbers never grow less and their marvelously sweet voices never be hushed!

**KILLDEER. *Oxyechus vociferus* (Linnaeus).**

The Killdeer may be considered a common resident throughout the Fresno district, and while it shows a decided preference for the vicinity of water it is not confined to such places and is often met with in dry, open fields. In the early spring it is often seen about puddles along the roads, and in the fall when the birds become restless and fly from place to place, their call can often be heard at night, especially in moonlight.

The Killdeer is a very early nester with us and large young have been seen as early as April 4. April 18, 1906, three eggs were found in a vineyard, two on a narrow ridge left in plowing and a third in the furrow below. By some chance this nest had been built exactly in line with the young vines so that in plowing only one side of the nest was disturbed and two eggs remained almost balanced on the knife-like ridge. The nest had been deserted for some time, evidently, and as the eggs had been almost ready to hatch at the time they were abandoned, it seemed like a case of early nesting. So the owner of the land was hunted up to furnish, if possible, the date when the land was plowed. He in-

formed me that he was not certain of the exact day but that the fifteenth day of March would not miss it more than a day or two. If this particular set of eggs was almost complete in incubation by the middle of March it must have been deposited during the last days in February or the first in March. Other nesting dates are given in the following table:

Date	Number of Eggs in Set	Incubation
June 28 1906.....	4	Advanced
May 4 1907.....	2	Fresh
June 27 1907.....	4	Begun
May 4 1908.....	4	Well along
March 20 1909.....	4	Half incubated
March 15 1910.....	4	Nearly fresh
March 25 1910.....	4	Small embryos

A typical nest throughout the cultivated sections is composed of a handful of white pebbles about the size of peas and very uniform in size, mixed with an almost equal number of dry shells of melon seeds of the previous year. Frequently a few dry, broken-up pieces of melon stems are used also, the whole being spread out over a space the size of a saucer, with the eggs resting in the center. As the result of coming in contact with a sharp rock that sometimes finds its way to the nest in place of the usual smooth ones the eggs occasionally show small gravel punctures.

On the summer-fallow fields only a few dry grass blades line the place where the eggs rest, while around the ponds of the west side the eggs generally lie half covered in the powdered alkali dust without a scrap of nest lining.

**MOUNTAIN PLOVER. *Podasocys montanus* (Townsend).**

The Mountain Plover is a not uncommon winter visitant in suitable places on the west side plains. Its preference, seemingly, is for the open pasture lands, and it is seldom found in the bushy areas, as is the Long-billed Curlew. The presence or lack of water seems to make very little difference to this plover so long as there is a large open field near at hand. The birds feed in large, loose flocks, running ahead of an intruder and only flying when too closely pressed.

December 3, 1904, there was a very large number of these birds near the roadside between the Artesian Lake and New Hope. Mr. Joseph Sloanaker reports them as common near Raisin during the winter of 1910-11, and the writer has a specimen from there, taken November 26, 1910.

**PLUMED QUAIL. *Oreortyx picta plumifera* (Gould).**

This splendid bird is known to sportsmen and campers universally as "Mountain Quail". While a resident of the higher Sierras, it has been known, during very severe storms in the mountains, to come down almost to the plains. It has been definitely reported from near Centerville, and it is on this record that the species has been given a place on this list.

**VALLEY QUAIL. *Lophortyx californica vallicola* (Ridgway).**

There is no bird in Fresno County, not even excepting the Mockingbird, that is so well known to all classes as is this one. It is known everywhere to

sportsmen, agriculturists, tourists, and the city dweller, as "quail", without any descriptive or qualifying prefix.

Formerly a resident of the foothills, it is very fortunate for the future welfare of the species that it early learned of the protection afforded by the large vineyards now so numerous throughout the valley. For many years it has been so thoroughly established in these cultivated areas that we may expect it, under the present excellent game laws, not only to hold its own in such places but actually to increase, while those individuals that choose to remain in their original habitat seem to be gradually diminishing in numbers. The reasons for this are evident when we consider that the majority of vineyardists consider the quail a beneficial bird, and absolutely forbid shooting on their land. This fact, together with the abundant food supply, safe retreats in which to nest, and, last but by no means least, the dangers from hawks and predaceous mammals reduced to a minimum, makes the struggle for existence here much less severe than in the hills.

Another place in the county must be mentioned where the bird is to be found, and where it would hardly be expected to occur. In the swampy areas around Wheatville and Riverdale, where rank grass and willow-lined sloughs seem to suggest Green Herons and blackbirds, the quail finds a not less pleasant home.

While driving along a nearly submerged road near Wheatville, July 13, 1911, a quail flew from a willow, and whizzing out over the water alighted in a clump of marsh grass. Black Terns were calling nearby, and the numerous Blue Herons standing hip deep in the overflowed alfalfa fields made a scene suggestive of anything but quail.

As a destroyer of various caterpillars and ants the quail takes high rank, and a flock of these birds about a vineyard or orchard is of inestimable value in reducing the number of bugs. Fortunately this fact is recognized by many farmers and fruit growers although we hear an occasional complaint of the grapes being picked open and raisins scattered from the trays by the quail. The cutworms, which cause such havoc to the vines at times, are eagerly sought for, and the little hollows scratched at the bases of vines, so often to be seen in spring are evidences of the work of this, our proverbial "early bird".

Besides a diet of insects, this quail is very fond of seeds and grain, and in late autumn birds are often seen with crops crammed to their full capacity with various weed seeds.

In March or early April the large flocks of quail break up, and pairs are to be seen running across the roads, investigating gardens and berry patches, and calling cheerily as they search for nesting sites. At this time they become much more fearless, often coming almost to the doorsteps of dwellings. About this time a rather curious trait becomes noticeable, that of dropping eggs indiscriminately on the ground. So common is this habit that a walk through a field or vineyard frequented by quail is almost sure to reveal one or more of these eggs lying on the bare ground, and through the month of April the author has often picked up half a dozen of them. The most reasonable theory to account for this, it seems to me, is to be inferred from the fact that our quail prefer for a nesting site, more than anything else, the shade of a large grape vine the foliage of which extends to the ground and affords a cool retreat where they can nest in comparative security. At the time eggs are found scattered about, the grape

vines have not attained sufficient growth to be of much value for concealment, and probably the birds prefer to wait until such a time before preparing nests in which to deposit their eggs.

Besides concealing their nests under vines quail sometimes choose grain fields, alfalfa-grown lowlands, and weeds along ditches, as places in which to hatch their young. Occasionally strange sites are selected, and one pair was found that had sixteen eggs neatly hidden in a pocket in the side of a haystack; another nest was found concealed under a clod in a field. They are even said to nest, at times, on a bunch of leaves or an old jay's nest in a willow, sometimes at a considerable elevation. The nesting period is from early May through July. Although no little time is occupied in depositing the large number of eggs, yet the actual work of preparing the nest is probably of small moment, as a slight hollow scratched in the ground seems sufficient. Often this hollow is lined with dry grass, leaves, or feathers, but sometimes only a few straws are used; in such cases eggs may be partly buried in the soft dry earth.

The smallest number of eggs that I have ever observed in a nest was a set of ten; but as the nest was found in late July it was no doubt a second set. One nest was found on May 16, 1902, with twenty-two eggs, and another on June 2, 1907, with twenty-one. Sets of from fifteen to seventeen are most common.

I am not yet willing to agree that all large sets of quail eggs are the result of two females using the same nest; but in one instance that came under my observation this must have been the case. April 19, 1907, a nest was found just before noon with four eggs, and while passing the place late in the afternoon I looked into the nest and found six eggs. After that the set increased only one egg each day, but the two eggs appearing in the afternoon rather upset a theory I had held as to quail always depositing their eggs early in the morning. So far as I have been able to learn, the period of incubation is, approximately, twenty-one days.

The manner in which a dozen or more young quail can disappear before the very eyes of an observer seems almost uncanny, and it requires no little searching to discover one of the little fellows hidden under a dead leaf or tuft of grass.

Many a dull, foggy, winter morning is made more cheerful by the call of this bird as a little flock runs through the vineyards, their feet pattering over the leaves like raindrops. In the twilight of a summer evening the same call floats cheerily up to us from the alfalfa field, just as the birds whirr away to their roost in the tall blue-gums near the barnyard.

#### BAND-TAILED PIGEON. *Columba fasciata fasciata* Say.

This is another bird of the mountains, that comes to us only at long intervals and then always in winter. Hunters inform me that these pigeons were very numerous in the valley all of one winter in the late nineties. One man tells me that they fed in large flocks on barley fields near Riverdale, and that they showed no great fear, always returning in a short time to the same field, even after being shot at persistently. When too frequently disturbed they often perched for a short time in some tall leafless willows, to fly again to the fields where they fed. This same hunter kept one wing-tipped bird in captivity for several weeks.

WESTERN MOURNING DOVE. *Zenaidura macroura marginella* (Woodhouse).

What wonderful opportunities are sometimes overlooked, and how often we fail to appreciate the efforts of our best friends until it is all but too late!

Had the farmers and fruit growers of central California realized the value of the dove as a destroyer of weed seeds it is probable that a law would have been passed years ago removing it forever from the list of California game birds. What a pity that some of those who should have been loudest in urging protection for the doves have remained silent, allowing the slaughter of these birds to go on year after year during July and August, just at the height of the nesting season. Many a late-summer nest has the author looked into, and from the broken or dried up egg shells, and often from the shriveled remains of two tiny, downy creatures, read a pitiful tale of cruelty, starvation, and death; and all to satisfy the lust for killing by that class of hunters who must have something at which to shoot.

It has remained for our Fish and Game Commission, backed by true sportsmen and other interested parties to remedy this evil by dividing the State into districts with seasons arranged to meet local conditions. I have been informed that the departure of doves from the northern portion of the state occurs annually in August; so that the northern sportsmen claimed that unless allowed to shoot during that month they would be denied the privilege of dove-shooting altogether. Thus we see the fallacy of a uniform law for a whole state of the size, and with the diversified conditions, of California.

Under the present arrangement the birds are protected in this, the fourth district, until September first, and shooting is limited to that month and the following one. Personally the writer is convinced that October first would be a still better date for the opening of the season, from the birds' standpoint at least; but such a victory has been gained in extending protection through July and August that we must be willing to concede a few points.

As a destroyer of noxious weed seeds the dove takes first rank, and during the summer and fall months these birds are to be looked for, when not engaged with household cares, in clumps of sun-flowers growing in fence corners and along ditches, in the patches of mullein that often carpet summer-fallow fields in this region, and wherever seed bearing weeds are allowed to grow on waste ground. Doubtless the shade and protection afforded in such places are added attractions; but the fact remains that several birds examined had crops distended to their utmost capacity with small seeds, showing that they had not been idle.

The number of seeds eaten by even a single dove in one year's time must be almost incredible, and, leaving out the question of sentiment altogether, the dove's usefulness alone is sufficient reason for protecting it at all times.

That the species has decreased somewhat during the past ten years can hardly be denied, yet at present it is in no danger of extermination, and with the laws now in force may be expected to increase in numbers from year to year.

The Mourning Dove is an abundant resident over the floor of the valley, finding conditions suited to its requirements not only on the large grain ranches but everywhere in the more highly cultivated fruit districts as well. During the nesting season the birds are scattered over the country in pairs, but often nest so numerously in the willows along certain canals as to appear to be nesting in col-

onies. Late in the fall they congregate in flocks, often of large size, and spend the winter in such companies, flying from one field to another when disturbed. At this time they frequently become quite unapproachable, a characteristic that is not easily understood when we consider their fearlessness all through the breeding season and even after shooting has commenced. The doves almost seem to feel that man should be their protector, and not until countless dozens of their number have been slain are they convinced that their confidence has been betrayed; but when once the lesson is learned the birds cannot in any way be won back to friendliness until the approach of another nuptial season.

The cooing notes that presage the nest-building time are generally first heard in this vicinity during February. In 1906 the date was the 26th, while the next year they were twenty-two days earlier. The present year (1911) they were late again, and they were not heard until February 22.

In selecting a site for their nest a pair of doves does not seem to be governed either by the proximity to food supply, water, or any other condition, so far as I can determine. As previously suggested they nest in greatest numbers, perhaps, in the willows that border nearly every irrigation ditch, but this may be accounted for from the fact that these trees constitute practically the only timber in many places. Although the species nests commonly on the ground, yet it probably has learned that elevated nests are less liable to be disturbed. Various situations are chosen in these willows, but most often the nest is placed on a large horizontal branch from one to thirty feet above the ground, while in some instances they choose the topmost branches, fully forty feet up.

Peach trees in orchards and fig trees that grow along the roadside in front of vineyards are commonly selected, while almost any kind of a tree is liable to be appropriated at times. The average height is from six to ten feet from the ground.

While walking through a wheat field near New Hope one morning in April, I flushed three doves, each from a nest on the ground among the wheat, which was at that time only a few inches high and far too thin to conceal the bird on the nest. Numerous nests have been found on the ground in the vicinity of Clovis, some at the base of grape vines, others in alfalfa fields or among weeds. These ground nests consist of a very few straws which, in many cases, do not prevent the eggs or young from coming into direct contact with the ground; it is possible that the warm earth assists in incubation. Nests in trees vary from slight saucer-shaped affairs, scarcely sufficient to hold the eggs, to elaborate masses of rootlets and dry grass stems.

The earliest date upon which I have ever observed an occupied dove's nest was March 30 (1907), when two half-grown young birds were found. Several nests with perfectly fresh eggs have come under my notice as late as the first week in September.

Two, and probably often three, broods are raised, the first early in April and the others at any time up to the last of August. After examining hundreds of doves' nests the author can record only two in which the complement of eggs was more or less than two. One of these was a set of three noticed on May 31, 1902, but in this case I felt certain that the extra egg had been deposited by a second female, as it was somewhat smaller, more pointed, and of a shade so unlike

the others that there appeared to be a difference in shell texture. April 22, 1908, a dove was found occupying what was undoubtedly the remains of an old, abandoned nest of a mockingbird relined with just a few dry, brown rootlets, upon which rested a single egg far advanced in incubation, as was evidenced by its dark color. There was nothing to indicate that a second egg had ever been deposited, and the unusual depth of that nest seemed to preclude the possibility of an egg having rolled out, so that it is probable that in that case only a single egg was ever produced.

The dove, whether observed walking quietly across the road in the soft light of early morning, dropping into a canyon to drink from a water hole, or swiftly winging its way to roost in the willow fringe along some canal, always displays a quiet grace of manner that makes it an attractive bird under all conditions, and one that it seems a pity to kill for the small morsel of flesh it affords, or for the mere pleasure of shooting something.

CALIFORNIA CONDOR. *Gymnogyps californianus* (Shaw).

This great bird was no doubt common at one time on the plains along the western side of the county; but that day has passed, probably forever. Residents of the district along the eastern slopes of the Coast Range mountains and on the plains inform me that even yet one of these birds is sometimes seen, but the species must be considered very rare at the present time.

Personally, the author has seen just one Condor in Fresno County and that was during July, 1900. This was while I was staying for a few days at a ranch house some six or eight miles north of Wheatville. The Condor flew over at a distance of at least three hundred yards above the earth; but a familiarity with this bird's appearance, gained among the Tehachapi Mountains during boyhood days, rendered it recognizable at a glance. Upon calling the attention of a man who was working nearby, to the Condor, he informed me that it was "a vulture but not a turkey buzzard". He also stated that one had been shot near there during the preceding winter.

Miss Winifred Wear tells of seeing, near Friant, as late as last March (1911) what she was certain could have been nothing less than a Condor. The bird was perched on the ground near the railroad and took wing at the approach of the train. This record would place the bird well into the Sierra Nevada foothills.

TURKEY VULTURE. *Cathartes aura septentrionalis* Wied.

Of all the birds that I have ever had the privilege of observing none has interested me more than the Turkey Vulture. There are many questions concerning him that I have never been able to answer. As he pursues his way silently over hills and fields there seems a sort of mystery about his very silence.

There are records of the occurrence of this species during every month of the year, but they are noticeably scarce during December and January. My records for those two months show that buzzards were nearly always seen during stormy weather and especially during showers. Possibly this may be accounted for by the fact that in rainy weather the buzzard prefers, or is compelled, to fly near the ground and thus becomes more conspicuous.

There are three places in this part of the state where Turkey Vultures are

said to breed, but circumstances have never permitted me to visit any of them. A few miles west of Friant there is a high chain of very rocky ledges extending for several miles almost parallel to the San Joaquin River. I have been told of a young vulture being found at the foot of one of these hills some years ago, and as it was unable to fly more than a short distance it was no doubt hatched somewhere in the rocks above. Mr. Chas. E. Jenney tells of exploring caves that were strewn with bones of small mammals, and containing other evidence of having been occupied by vultures. Although these hills are on the west side of the river, and therefore in Madera County, they are included in this list as they are visible for some miles in Fresno County and within a short distance of one of my favorite collecting grounds.

Above Academy the hills, for a mile or two along the wagon road, are very steep and rocky, with numerous rather small oaks. An ornithologist from the southern part of the state upon seeing those hills exclaimed, "My! what a place for turkey buzzards." In *The Oologist* for April, 1908, is a view taken by Mr. G. A. Abbott in the Aransas Pass region of Texas, which is not at all unlike some of the country above Academy, and I believe it would be possible to secure one or two views that would bear a marked similarity to Mr. Abbott's splendid illustration. On the 18th of May, 1908, I camped in one of these canyons, and was much interested just after sunset in watching the vultures that appeared from somewhere above and began circling about the higher hills, until finally, as darkness came on, nearly three dozen of the big fellows settled down into the canyon to roost in some tall sycamores.

Rumors have come to me at times of eggs having been found among the rough, sun-scorched gullies along the eastern base of the Coast Range mountains, near the outlet of Panoche Creek, thirty miles or more west of Fresno. All three of the places mentioned seem ideal for the requirements of buzzards, and I shall never be satisfied until each has been visited during the nesting period of the Turkey Vulture.

I have always been much interested each spring in the return of these birds, for most of them, apparently, spend the winter somewhere to the southward. These flights usually occur in February and last for a day at a time, and during ten years of observation the line of flight has not varied a quarter of a mile, the birds coming from a point southeast of Clovis and passing on toward the northwest in the direction of the river. A very interesting feature of these flights is that they occur, almost without exception, during a strong wind and generally at a time when a storm is just breaking up and clouds are hurrying before the gale. The surprising fact is that the flight is directly against the wind, and on one occasion when the wind varied slightly the line of flight was changed correspondingly. The only exception to this rule that I have ever noticed occurred on March 5, 1906, when the wind blew strong from the southeast and the buzzards were traveling along with it. On one occasion the wind had been blowing briskly all day but died down suddenly about four o'clock and the flight ceased almost at once.

These returning birds do not come in great flocks but trail across the sky in single file, sometimes only a few feet apart and again as far apart as one hundred yards or more. Every mile or so they pause and begin to circle around, occasion-

ally mounting higher but more often for no other purpose, seemingly, than to allow the stragglers to catch up. Sometimes these birds fly very low, tacking and flapping against the wind; at other times they sail along far above the earth.

During 1906, these flights occurred February 22, March 5, and March 17, each being a partly cloudy and very windy day, and although there had been many calm sunshiny days between, not a buzzard was seen during the intervals. On the 17th I happened to be where I had an excellent opportunity to observe them. I do not know how many had passed over before they were noticed, but I counted one hundred and fifty-four of the big fellows within the next half hour. These flights have been observed as early as the first week in February and as late as the third week in March, depending, seemingly, upon the weather.

Now, the questions that interest me most are these: Where do these particular birds spend the winter and where do they go after passing this place in the spring? Is this a general migration that extends throughout the southern and central parts of the state? If so, how far north do they go? I shall be very grateful to anyone who will answer any of these questions for me.

On October 5, 1905, I saw a large number of vultures congregating overhead at a great height, and no sooner would some of them drift away toward the south than another squad would begin to form, and this continued throughout that day and part of the next forenoon. After that date vultures were noticeably scarce, but not altogether absent, in the vicinity of Fresno. The previous year a similar exodus took place on September 21.

One windy day in March the writer was investigating some willow clumps along the San Joaquin River, and noticed a Turkey Vulture a short distance away perched on a branch of a sycamore that extended over the water. The bird had his back toward me and appeared to be asleep, so I threw a stone toward him, desiring to see what he would do if suddenly disturbed. As the missile crashed through the branches and fell with a splash into the water it produced an effect both disgusting and amusing. Without even looking around to learn the cause of such a rude awakening the vulture proceeded with all haste to unburden himself of apparently the greater portion of his last meal. At the same time he sprang into the air and flapped hurriedly out of sight down the river.

#### WHITE-TAILED KITE. *Elanus leucurus* (Vieillot).

The only record the author has been able to unearth of the occurrence of this bird in any part of the valley was given him by Mr. Chester Lafinb, who saw one of the birds flying over the oaks near Laton, on the last Sunday in May, 1910. Upon his return from there he told of seeing the Kite and mentioned it as being the first one he had seen since the summer of 1899, when he observed the species near Palo Alto.

The region about Laton seems better adapted for this bird than any other place in the valley, and the presence of at least one bird of this species during May might indicate that it was breeding there.

#### MARSH HAWK. *Circus hudsonius* (Linnaeus).

Formerly this hawk was an abundant winter visitant over the lowlands almost everywhere in the valley, but, like nearly all the birds of prey, it seems unable to withstand the onward march of civilization. It has been much reduced

in numbers throughout the region and has completely disappeared from some of the more thickly settled areas.

Wherever large grain or stock ranches are to be found this bird is still common, and it occurs numerously on the uncultivated plains along the west side. Since its food consists principally of mice and gophers, with, no doubt, many large insects added, it must have broad open fields to hunt over. Any time from the first of August until the last of March these hawks may be seen skimming low over the earth, pitching suddenly to the ground to pick up some object, or perching on a knoll when a rodent is captured too large to be swallowed at once.

While it is probably not often that birds are captured, the Marsh Hawk being a comparatively slow flyer, yet the smaller birds seem to fear it greatly. One winter, while working for a few days near a half-section of stubble, I was continually reminded of this hawk's presence by the great number of doves and horned larks that were disturbed; no sooner would one flock become settled than another would fly up.

Rumors have come to me, not a few times, of the nesting of this hawk on the plains and elsewhere in this vicinity, but I have never been able to verify any of the reports. Two young men tell of finding a hawk's nest on the ground in a hay field about four miles east of Clovis some ten years ago. It contained four young birds at "haying time".

SHARP-SHINNED HAWK. *Accipiter velox* (Wilson).

The author has always maintained, and has endeavored to find proof to back up the statement, that each bird represented in the Fresno district was of some use, and that its value to the community would far offset any damage of which it might be guilty. In the case of the Sharp-shinned Hawk, however, after observing its manner of life for many winters, the only admirable thing that can be said of it is that it is a skillful, fearless hunter.

It is very doubtful if all other agencies combined are as destructive to small birds as this hawk, and the number of sparrows and other ground feeding birds that are captured is simply appalling. Skimming along low over the ground, dashing into thickets and brush piles, with a flight that is noiseless, but marvelously rapid at times, he is upon a flock of sparrows before they are aware of his presence, and seldom does he fail to capture one. If by any chance the intended victim eludes its pursuer and takes to the open in an attempt to reach another brush pile, it is surely doomed; and with a few rapid wing beats and a final swoop the little bird is carried to some place of concealment, stripped of feathers, and devoured.

The birds that appear to suffer most from this hawk around Fresno are the Mockingbird, Intermediate Sparrow, Valley Quail, and Say Phoebe, in the order mentioned. Mockingbirds are especially easy prey and apparently become paralyzed with fear when a Sharp-shinned Hawk puts in his appearance. After that they make no attempt to escape but simply crouch down and allow the hawk to pick them up. Numerous little bunches of feathers along fences, on brush piles, and in weed patches mutely tell of such tragedies. One winter the writer shot a sharp-shin that was carrying a Say Phoebe in its talons; February 18, 1911, another was killed as it flew over a willow clump with the half-eaten re-

mains of a Mockingbird; and on another occasion a quail whizzed past me with one of the little hawks in close pursuit. Unless the quail was able to reach some sort of cover into which it could dive, I am afraid it proved to be a hopeless race.

The Sharp-shinned Hawks arrive in this vicinity before the first of October and remain until the middle of April, frequenting the small blue-gum groves, willow thickets, or any other trees that afford concealment, and from which they sail forth on their missions of destruction. These hawks are especially numerous in the willows along the larger sloughs of the west side but they are quite commonly distributed throughout the entire valley.

COOPER HAWK. *Accipiter cooperi* (Bonaparte).

It is probably very fortunate that this hawk is not an abundant species in Fresno County, for with its larger size and well known powers of flight it would be even more destructive than the Sharp-shinned Hawk. The former is pretty generally, but sparingly, distributed through the low lands during the fall and winter, but during the breeding season it seems to be confined to the willow clumps along the rivers, where it nests.

March 25, 1906, while looking up data on the nesting habits of *Buteo borealis calurus*, I entered a rather thick growth of willows that line the banks of the San Joaquin River a few miles below Lane's Bridge. I was suddenly surprised by a Cooper Hawk that dashed close past me, then swept upward to join her mate, screaming shrilly as she flew about with angry demonstrations, now swooping on stiff-set wings, again beating through the air with strong rapid wing-beats. A nest that would probably have remained undiscovered but for these demonstrations was soon located about twenty-five feet up, in the forks of a single willow shoot, which, although not over six inches in diameter, had attained a height of thirty feet or more. The nest was rather large, and composed of long, dry willow twigs of quite uniform size. To all appearances it was ready for occupancy, being lined with half a dozen green willow twigs with the tender new leaves attached. An attempt to visit the nest the third week in the following April was unsuccessful as the river was very high and the willows were standing in several feet of water. April 29, 1911, while exploring the same willows a Cooper Hawk flew past me, within ten yards, but I failed to find any nest.

WESTERN RED-TAILED HAWK. *Buteo borealis calurus* Cassin.

At the present time the Western Red-Tailed Hawk is quite generally distributed throughout Fresno County, being most numerous in the foothill regions along the eastern base of the Sierras, and along the San Joaquin River. A few pairs nest in favorable places in the valley, but in the immediate vicinity of the city they are not common until the winter months. Then the species is scattered over the vineyards and orchards, and is liable to be met with almost anywhere, although it is never actually abundant.

The habit of sitting motionless on the top of a dead tree or telephone pole makes this hawk a rather conspicuous object at times, and he often pays for his prominence, for there are persons who consider it almost a crime not to shoot at a hawk whenever one is to be found.

March is the month when this hawk begins nesting, although, in favorable

seasons, an early pair may occasionally begin laying during the latter part of February. In the foothill regions the nests are often built in oak trees while in the canyons the tall sycamores are more frequently utilized. The few pairs that nest in the valley choose cottonwoods or eucalyptus for nesting sites.

March 26, 1906, the writer secured a very nicely marked set of three eggs from a nest forty-four feet up, in a large oak growing in the bed of Dry Creek, below Academy. This nest was compactly made of large, dry, oak sticks, and the lining consisted of the red inner bark of cottonwood, together with several willow twigs to which were attached some very small green leaves. The three eggs had been incubated a week or more.

Another nest with three slightly incubated eggs was found March 21, 1907, in a large sycamore, forty-six feet from the ground. There were no leaves in this nest, but several bunches of green cottonwood berries were used instead. A freshly killed meadowlark, from which nearly all the feathers had been stripped, was found in the nest with the eggs. One of the birds was occupying her home and may have been presented with this food by her mate. One nest examined April 5, 1908, had for a lining several oak twigs with very small green leaves, and the entire nest of a Bullock Oriole of the previous season's use.

Nests of this hawk, especially when built in sycamores, are sometimes placed from fifty to seventy-five feet from the ground, and are often rather difficult to examine. In no case has either of the owners ever proven very demonstrative, and their disapproval is usually expressed in the whistling scream that sounds like the words "pee-yare," which is heard as the bird flaps around nearby or perches on some neighboring tree. Personally, the writer has never found a nest of this hawk that contained a complete set of more or less than three eggs, but Mr. Chas. E. Jenney, who has been much afield along the San Joaquin River, tells me that he has found sets of four almost as common as those of three.

The only complaint that I have ever heard against the Western Red-tailed Hawk is that during the months of September and October it occasionally acquires a liking for chickens, but this is probably an individual characteristic rather than one that can be charged to the species generally. On the whole, these big hawks are of such service in destroying squirrels and gophers that they should be protected, and encouraged to nest about the farms, especially by those who can endure the loss of an occasional well-earned chicken without becoming possessed of a desire to kill the entire hawk tribe.

#### SWAINSON HAWK. *Buteo swainsoni* Bonaparte.

This is another of our migrant hawks, but unlike most of the others it comes to us early in the spring and departs at the close of its nesting season. I consider this hawk, next to the Barn Owl, the most beneficial bird-of-prey occurring in this district. It feeds almost exclusively upon mice and gophers, and I have yet to find anyone to complain of its taking either chickens or any kind of wild birds.

I once saw half a dozen of these hawks sitting on fence posts watching for mice. This was on a large wheat and stock ranch and not far from the ranch house. I questioned the owner of this farm and he informed me that he allowed the hawks to hunt undisturbed over his place, and that they sometimes nested

almost in his dooryard, but that he had never suffered the loss of any poultry, while the service rendered in keeping the mice and gophers in check would have repaid him for the loss of many chickens. Would there were more of that kind of farmers!

*Buteo swainsoni* arrives in this vicinity late in March and is common by the first of April. The birds depart in August, gathering in large flocks and moving leisurely.

This hawk nests on the west side plains, along the San Joaquin River below Lane's Bridge, and in the cottonwoods on Dry Creek, east of Clovis. For a more complete account of the habits of this bird, as observed in Fresno County, the reader is referred to *The Oologist* (xxv, no. 1, pages 9-12).

AMERICAN ROUGH-LEGGED HAWK. *Archibuteo lagopus sancti-johannis* (Gmelin).

This hawk occurs during the winter on the uncultivated plains extending from Raisin to within four miles of New Hope. Individuals have been most frequently observed near the Artesian Well, sitting on knolls and the mounds around squirrel excavations. They are rather sluggish birds, seemingly, and if undisturbed will allow a fairly close approach. When finally forced to take wing it is only to fly heavily to another eminence a short distance away. Some of the birds appear almost black. I have never seen this hawk elsewhere, and it can not be regarded as common. I have seldom observed more than one bird in sight at a time.

I have been unable to get definite information as to the dates of arrival and departure of this bird, but it is safe to say that the species is more common during November and December than at any other time.

Mr. Joseph Sloanaker presented the author with a beautiful skin of a female rough-leg, taken near Raisin on November 26, 1910. This specimen measured twenty-one inches in length. A farmer shot the hawk and brought it to Mr. Sloanaker in a crippled condition. It was kept alive for a day or two, but seeing it was not likely to survive its wounds, it was finally dispatched. This specimen has been examined by Mr. Grinnell, who verified our identification.

FERRUGINOUS ROUGH-LEGGED HAWK. *Archibuteo ferrugineus* (Lichtenstein).

This large hawk occurs in certain sections during the winter, but very little seems to be known of it locally. I should call it a rare visitant, occurring most often along the sloughs of the west side region. It prefers a more wooded country than the preceding species and hunts along the willow-bordered sloughs and over the grain fields, but seldom intrudes upon the range of *sancti-johannis*.

December 2, 1904, I examined one of these birds that was found dead near New Hope, and January 12, 1906, another that had been shot and left lying at the roadside near Clovis.

GOLDEN EAGLE. *Aquila chrysaetos* (Linnaeus).

The Golden Eagle is another resident of the mountains, but occasionally, in winter, it comes down into the valley. Mr. Chas. E. Jenney tells of having captured a sick or wounded eagle some years ago and keeping it in captivity for some time, after which it was released.

March 17, 1902, an eagle was seen soaring over the grain fields one mile

north of Clovis. January 1, 1905, another was seen two miles south of Clovis, flying from the west, and having come, no doubt, from the Sierras. November 28, 1906, another eagle was observed circling over the fields three miles southeast of Clovis, and I was told of one having been shot on the west side plains several years ago.

Specimens are occasionally brought into a local taxidermist's shop, but most of these probably come from the mountains.

BALD EAGLE. *Haliaeetus leucocephalus leucocephalus* (Linnaeus).

Only once has the author ever observed the Bald Eagle in Fresno County. On the afternoon of February 16, 1906, a splendid example flew over an orchard where I was working near Clovis. Flying at no great height he was plainly seen, but just after passing over he made a broad circle as if to allow me a better opportunity to admire his snowy head and tail, glistening like silver in the sunlight. He then swept on eastward toward the mountains.

No doubt this eagle had been following up the San Joaquin River, which was about ten miles away.

PRAIRIE FALCON. *Falco mexicanus* Schlegel.

So far as the author can learn the favorite hunting ground of the Prairie Falcon is rough, foothill country; and as such conditions are not found in the immediate vicinity of Fresno I attribute the apparent scarcity of the bird to a lack of suitable environment. I have observed a very few of these swift-winged falcons during the past ten years, nearly always in the fall and during dust and wind storms.

A farmer living near New Hope once told me of a long-winged "bullet-hawk" that made regular visits to his place in quest of young chickens, which it seized and bore away so rapidly that he could never prevent the loss. Finally he resolved to wait for the robber, as it always appeared about the same time each day, coming from the foothills of the Coast Range mountains, fully twenty-five miles away, and returning toward the same place. Standing in the shelter of a shed one day, shotgun in hand, this man observed the falcon approaching, and fired just as it had started away with a squawking young fowl. At the shot the bird dropped its victim but continued its flight, although apparently much weakened. It was never seen again.

Up in a canyon above Cantua Creek there is a series of caves or potholes on a steep cliff, where some large bird formerly nested, as evidenced by the streaks of white excrement that marked the face of the ledge below one of the holes. I have no doubt that this was the home of the pair of Prairie Falcons, one of which had discovered such a rich hunting ground twenty-five miles away.

I have been told that a pair of these falcons have nested for years on the almost inaccessible cliff above Tollhouse, in the Sierra foothills on the opposite side of the valley. Both of these stations are well outside the bounds of the region treated in this work, but on account of the rarity of the birds in Fresno County it seemed not out of place to mention these two instances of their probable occurrence.

DUCK HAWK. *Falco peregrinus anatum* Bonaparte.

What the Sharp-shinned Hawk is to small birds, this falcon is to ducks and

other water fowl. The flight of the Duck Hawk is so marvelously fast that even ducks have not a chance to escape unless there is some pond or slough nearby into which they can dive. The writer remembers standing, with several companions, on the shore of Summit Lake one late October day, when, upon hearing a sound like a heavy wind blowing through the tules, we turned and saw a duck plunge into the lake from a height of not less than six hundred feet. The splash of the impact resembled the report of a revolver. "Bullet hawk", called one of the men, and looking up we saw one of these long-winged pirates making off for a new field.

At another time we noticed a small flock of teal winging their way toward us, with a black speck fully a quarter of a mile in their wake and slightly above them. The flight of the ducks, rapid as it was, seemed slow in contrast to that of the hawk. The latter was almost upon the unsuspecting birds in an incredibly short time. Suddenly the ducks scattered and half a dozen teal fell with cries of fear into the water almost at our feet. Had there been no water directly under them at the moment the hawk was seen there is no doubt that at least one duck would have been captured. A friend tells of seeing a Duck Hawk dash at a lone goose that was flying over, striking it head-on with such force that it fell within a few feet of the observer. Besides a broken wing the bird seemed to have suffered otherwise to a great extent, for it soon expired.

During the winter of 1903 one of these hawks was seen many times about my father's place near Clovis. A flock of Brewer Blackbirds that fed in the corral back of the barn was levied on for a heavy toll, and in a manner against which the birds seemed totally unable to guard. I happened to be within a few yards of the corral one afternoon when the falcon hove in sight. He seemed aware of the exact location of the blackbirds, and with a dash of speed so rapid that I could hardly follow his movements, circled completely around the barn, seized his victim without pausing, and with powerful strokes of his long pointed wings made off for some more secluded place. The blackbirds hardly knew what had occurred and before they could give a hurried "chack" and take flight the hawk was almost out of sight, so with a nervous half-foolish manner they settled down again as if realizing that something had occurred, but totally unable to understand what it was.

One bright January day I noticed a coyote sneaking through a field of stubble, and as he seemed unaware of my presence I concealed myself to see if I could learn something of his habits. As he trotted along a jack rabbit suddenly jumped up and came straight toward me, and the coyote was not long in starting in pursuit. When they were within less than one hundred feet of the place where I was hidden there was a sudden rush of wings and a duck hawk dropped like a meteor straight for the rabbit. When within about ten feet of the ground the hawk spread his wings and attempted to seize the rabbit, which, however, escaped by suddenly turning back, but in so doing came very near dodging into the mouth of the coyote. The roar of wings seemed to slightly disconcert *Canis*, who was not prepared to take advantage of so good an opportunity, and before he realized what had happened the hare had decided that things were getting too lively and was covering the ground with long leaps. The coyote loped along behind, evidently not desiring too close an encounter with a creature that could

produce such an ominous roaring sound. Meanwhile the falcon mounted higher and higher and then dropped again. Three times this performance was repeated before the trio were lost to view, and although the rabbit gave a good account of himself, yet I fear the odds must have eventually proven too great.

On another occasion the author was acting as ditch tender, and was guarding a rather high fill that was carrying about all the water that could be crowded through the ditch. The March sunshine produced a drowsy feeling, and as I sat on a head-gate with my thoughts, perhaps, centered more upon some Red-tail's nest up in the hills, than upon my duty, there was a sudden roar as of a large volume of water rushing through a small aperture. I sprang to my feet thinking that the ditch bank had given away, but was much relieved when I beheld one of the long-winged, black-moustached falcons, which had made a parachute drop upon some small object in a nearby field.

NORTHERN PIGEON HAWK. *Falco columbarius columbarius* Linnaeus.

The Pigeon Hawk must be considered a rare winter visitant to this part of the valley, and I have only two or three records of its occurrence.

About the middle of October, 1905, one of these little hawks stayed around the trees on my father's place near Clovis, for a week or more, and was often seen. When discovered on some perch it would fly through the nearest tree, out on the other side and disappear with a fast, strong flight. On the morning of October 18, as I came out of the house I was surprised to see my hawk sitting on the clothes-line post in the back yard. He was but a few yards distant, and the brownish tail with narrow white bands and white tip, together with its white throat-patch, convinced me that my previous identifications had been correct.

I have records of this hawk as noted February 20, 1903, and November 3, 1903, both birds being quite satisfactorily seen at close range.

AMERICAN SPARROW HAWK. *Falco sparverius sparverius* Linnaeus.

Nearly everybody knows this, the smallest of our hawks. Fortunately the majority of the agriculturists and sportsmen realize that it is, for the most part, a harmless little hunter and for this reason it is seldom molested, except by that class who shoot at anything that wears feathers or fur. The Sparrow Hawk is quite generally distributed all through the lowlands in winter, but retires to wooded areas during the nesting season. It is known to nest along the San Joaquin River, in the oak covered districts in the southern part of the county, and in the trees along some of the creeks that come down out of the hills.

This species subsists to a great extent upon grasshoppers, crickets, and other large insects, as well as mice; and the bird-catching tendency seems to be a trait that only appears in the case of certain individuals.

One winter a male of this species, which spent the greater part of its time in my father's vineyard, seemed to be especially destructive, pursuing and capturing not a few sparrows, while on one or two occasions he dined on Meadow-larks. This habit, happily, was not shared by several others of his kind that were frequently seen nearby.

June 8, 1907, while driving along the road just above Academy, I noticed that grasshoppers were flying up from the roadside in goodly numbers and zig-

zagging out into the fields. Soon I saw a Sparrow Hawk leave its perch in an oak tree, and, deftly seizing a flying hopper, it perched by a hole under a dead branch, and reaching inside, deposited a meal for its mate or children. While I was within sight of the tree the performance was repeated, so that grasshoppers were probably the staple diet of this family at least.

May 9, 1908, I examined two nests of these little falcons in trees along Dry Creek, six or seven miles east of Clovis. One nest was in what was, no doubt, an old excavation of a flicker, sixteen feet from the ground, in a large, rotten branch of a cottonwood. This cavity held small, white, downy young, and I was attracted to it from a distance by the female bird, which came out to meet me. She kept up a continual screaming while I remained near, and frequently dashed close to my head. Her mate did not put in an appearance.

The second nest was in a dead willow stub, and was not discovered until the female left the nest, after I had struck the tree several heavy blows. This excavation was about one foot in depth and eight inches in diameter at the bottom, where five eggs, far advanced in incubation, rested on the rotten wood and chips. The female left her home silently and was not seen again.

BARN OWL. *Aluco pratincola* (Bonaparte).

In all the bird kingdom there is probably no creature that is more unappreciated, more persecuted, or more disliked than this night prowler; yet it is certain that no other bird found in Fresno County can compare with it in usefulness. Great Blue Herons, weasels, and gopher snakes all do their part in keeping gophers in check in the alfalfa fields, but the Barn Owl probably captures more of these rodents than all other agencies combined. As a mouser he stands far above any other bird.

The author once found a pair of these owls occupying the garret of an abandoned house on the plains southwest of Fresno, and the number of bones of small mammals that were scattered about was surprising. There was not less than a five gallon measure full of skulls alone, the greater part of which appeared to be mouse skulls. A visit to the nesting place of a pair of Barn Owls should be sufficient to convince anyone that this bird is the farmer's friend, yet the appearance of one of these owls is very often greeted with a charge of shot, for to kill "one of them Monkey-faced Owls" seems to be regarded as a good deed.

Fortunately Nature has made this owl a nocturnal hunter. It is because so many of the rodents are most active during the hours of darkness that owls can be of such great service.

It is seldom that Barn Owls are seen during the day time, unless aroused from their hiding places. But fleeting shadows falling across the street on moonlight evenings tell of their presence as certainly as does the sudden "kar-r-r-ick" that is frequently heard overhead. The hiding places are in thick trees, in old houses or barns, and in holes in banks; but at night the birds are distributed quite generally over the valley.

The same places that conceal the birds during the daylight hours are used in many cases for nesting sites. As far as I can learn the holes in the banks along the San Joaquin River shelter by far the greater part of the nesting owls in this vicinity. In my experience six eggs constitute the usual set, although no doubt

more are at times laid. Sometimes the eggs lie on the bare earth or whatever material the nest cavity contains, but nearly always there is a large amount of fur, bones, and other refuse lying around and under the eggs. Six eggs found in a nest on April 12, 1902, were in various stages of incubation, one or two being nearly ready to hatch. Another nest that was examined on the same date just six years later was found to contain six eggs not quite so far advanced in incubation, while nearby was another cavity with four apparently fresh eggs.

May the Barn Owl continue to click and scream and cast his shadow over the fields through the long moonlight nights of many years to come!

**LONG-EARED OWL. *Asio wilsonianus* (Lesson).**

The Long-eared Owl is nowhere an abundant species in the vicinity of Fresno, for the same reasons, no doubt, that cause other owls to be scarce throughout this region. It has been met with along the San Joaquin River, and rarely in the trees that follow the courses of some of the creeks leading down out of the hills to the eastward of the city. It also occurs in certain favorable places along some of the large sloughs near Wheatville.

October 11, 1903, a Long-eared Owl was flushed from a thick willow clump growing close to the Gould ditch near Tarpey. After a short flight it alighted on a branch of a large cottonwood tree, where it sat blinking in the afternoon sunlight.

Mr. Chas. E. Jenney tells me that he has found this owl nesting in the willows along the San Joaquin River, and Mr. Grinnell mentioned having heard the call of this species near Lane's Bridge, while camped there the first week in April, 1911.

April 30, 1912, while walking along the dry bed of a slough not far from the New Hope school house, I frightened one of these owls from a willow, and soon found its nest which was built not over ten feet from the ground at the base of a large limb. The nest was very well built, and while I hardly think it likely that the tenants built it themselves, yet I am at a loss to know what species it belonged to originally. It was far too small and compactly built to be the workmanship of any of our hawks, and it could not have been constructed by crows or night herons, as neither have ever been found nesting anywhere near. The situation, too, was rather unusual, as I could almost look into it from the bank of the slough. It was the exposed position of the nest that made me doubt whether the owls had any part in its construction, as there were several dark and heavily foliated trees only a few yards away where it seems this species would have chosen a summer home, had the birds not been willing to make some sacrifices in order to avoid the duties of house building. The nest lining consisted of only a few dry leaves and grasses upon which rested six eggs just ready to hatch, two being already pipped.

I trust that Fresno County is now richer by six Long-eared Owls and certainly no more valuable creatures exist than these nocturnal hunters, ever on the alert to wage warfare on the mouse and gopher hosts.

**SHORT-EARED OWL. *Asio flammeus* (Pontoppidan).**

Short-eared Owls are very common in suitable places during the winter, and are known to remain and breed sparingly. December 25, 1902, one was flushed

from an alfalfa patch, near Clovis, and November 25, 1903, another from the same place. November 26, 1906, they were found to be common in a stubble field two miles southeast of Clovis. They were fearless, or perhaps their eyesight was not good, for I was able to approach within ten feet of one without difficulty. There were at least half a dozen individuals and probably many more in the field.

Mr. Joseph Sloanaker reported this owl as occurring near Raisin during the winter, and in the vicinity of Wheatville and Jameson they are really abundant. One evening in December while concealed in a stubble field near Jameson, I was astonished at the great number of Short-eared Owls, Barn Owls, and Marsh Hawks that appeared just before sundown and began hunting over the fields. The number of doves that were disturbed by these Raptores was almost beyond belief, and the noise made by their wings as they flew wildly about was almost deafening. When I resumed my walk toward camp it seemed a really perilous journey, and there was grave danger of being struck by one of the rapidly flying doves that wheeled and turned, alighted and took wing again in a veritable maze. I estimated that there were at least two hundred Short-eared Owls in sight. They could easily be distinguished from the Barn Owls by the marked resemblance of their flight to that of the Texas Nighthawk.

April 12, 1902, a man who was plowing in a field near New Hope, flushed a Short-eared Owl from the weeds, and brought to me the three fresh eggs that were lying on a circle of dry grass almost upon the bare ground.

April 30, 1908, while looking for owls' eggs near the same place, a man told me of driving his horse and cart almost over one of these owls as she sat on her neatly made nest of dry grass and feathers. This was about two weeks before my visit and he said the nest contained "seven or eight white eggs a little smaller than hen's eggs." I have flushed this owl from the ground at quite a number of places on the west side of the valley during April, but never found a nest.

SOUTHERN SPOTTED OWL. *Strix occidentalis occidentalis* (Xantus).

The occurrence of this owl in Fresno County is known to the author only through the observation of a single individual seen March 7, 1908. This was in a small grove of cottonwoods near Letcher, in the foothills about twenty-six miles northeast of Fresno and a little outside the district treated in this list. As it is a definite record for this general region it seemed not out of place to mention it here.

While I can give no other record of the presence of this owl, yet for certain reasons, I feel convinced that systematic work in the foothills along the western base of the Sierra Nevada Mountains in this county would prove that the species is not quite as rare as one would be led to believe from the scant information that can be gathered locally concerning it.

A more complete account of the record referred to above can be found in *The Condor*, xi, 1909, page 82.

CALIFORNIA SCREECH OWL. *Otus asio bendirei* (Brewster).

Of all the birds the author has ever encountered this one seems to be, by far, the most difficult to study, and after ten consecutive years of observation in the Fresno district any attempt to state whether or not this little owl is of common

occurrence would be mere guess work. I have heard the call of this bird within the city on one or two occasions, and Mr. Grinnell tells me that this species was one of the four owls that he heard along the San Joaquin River near Lane's Bridge the second week in April, 1911.

As the Screech Owl keeps so closely concealed during the daylight hours it might be easily overlooked. At any rate I have actually seen one of these birds only once, and that one had been routed out and was being mobbed by half a dozen angry mockers. It was the 11th day of August, 1906, when I heard such an uproar and scolding as to attract more than casual attention. I was working in a peach orchard about three miles east of Clovis, and as something out of the ordinary seemed to be going on I lost no time in investigating. The mocking-birds were flying into, over, and around a thick-foliaged tree in which a Screech Owl sat blinking and staring. When I was within about ten feet of the tree the owl flapped out and flew across the orchard with its tormentors in full pursuit.

Two days later some boys told me of shooting a small owl that they had found in a tray shed near the orchard. The next day, upon investigation, I found what was, no doubt, the same Screech Owl that I had previously seen. The appearance of the shed seemed to indicate that he had spent several days there.

PACIFIC HORNED OWL. *Bubo virginianus pacificus* Cassin.

Nearly everyone who has lived near the wooded sections of Fresno County has heard the voice of this, our largest owl, and it is known, often, by no other name than "hoot owl." Formerly not uncommon, these big birds are rapidly becoming rare, as they must have hunting grounds that have not been rendered barren by man and his plow.

These great owls are possessed of appetites that, seemingly, are seldom entirely satisfied. It may thus be hunger that often drives the Horned Owl forth on his foraging expeditions long before darkness has made it safe for the timid field mice to venture forth, and at times even before the sun has dropped below the western rim of the valley. December 28, 1904, just before sundown, a Horned Owl flew over an alfalfa patch near Clovis, and was not in the least confused by the glare of the setting sun. He made a swoop at a horned lark and then passed on.

A chance pair of these birds may still be found along Dry Creek east of Clovis, but the only places in the valley where they are at all common is along some of the large sloughs in the vicinity of Wheatville, and possibly in the oaks to the south and east of that place. They are often heard along the San Joaquin River also, but each year become less in evidence.

While camping near New Hope in the early winter of 1904 I was awakened just before daylight on the morning of November 30 by a pair of Horned Owls that were giving a concert nearby. One of the birds had a rather weak, feminine voice, peculiar in that it always ended with an extra "hoot" that was given after the bird had apparently finished its call. It sounded like "hoot, ta-who, who-who--hoot," the last note being not quite so loud but almost as distinct as the others. The other bird seemed to be stationed a short distance from its companion, and always answered in a deep, heavy, bass voice, sometimes before the first one had finished.

Among a clump of willows standing in three or four feet of water I found a pair of Horned Owls nesting on April 12, 1902. They were occupying what may have been an old nest of a Night Heron, a thin frail structure, placed fourteen feet above the water. It measured six inches in width on the inside and nine in length, with the cavity only two inches in depth; but it seemed ample for the great bird that occupied it, and for her three eggs. The latter were nearly ready to hatch. This was near New Hope, and on April 6, 1906, I examined two more nests of the same species within a mile of the first one discovered. One of these nests was thirty-five feet up, in a partly-dead willow in a field, and had three fuzzy, white, young birds of various sizes. The other nest was eighteen feet up in a willow in a thick clump that, as in the first instance cited, was growing in water. In this nest was one tiny owlet, apparently just hatched, one a little larger, and a third that was fully twice as large as his youngest brother or sister. There was one gopher and parts of two cottontails in this nest.

In examining the three nests referred to I was in apparent danger of being attacked by the angry parents. They remained near at hand, frequently jumping from branch to branch, and hooting continually.

March 29, 1909, while looking at a hawk's nest fully seventy feet up in a big sycamore that stands in the creek bed above Academy, I detected a big owl perched near the nest. I felt certain that his mate was on duty, but much as I needed a set of eggs of the Pacific Horned Owl for my collection, I passed on up the canyon leaving the owls undisturbed. It was not the first time, either, that I had looked up at that nest; but the forty or more feet of smooth bark to be scaled before a single branch could be reached was an obstacle too great for me to attempt to overcome.

**BURROWING OWL. *Speotyto cunicularia hypogaea* (Bonaparte).**

Ten years ago, throughout most of the region about Fresno, could be heard all through the April evenings the characteristic "kook-ka--wah" of the Burrowing Owl floating across the summer-fallow fields just as darkness hid the last night-hawk from view. During the long moonlight nights that followed later in the summer, the indescribable call that this little owl utters as it hovers over some object was none the less an indication of the abundance of these birds. This is the call that our Mockingbird has learned to imitate so perfectly, but for which man's alphabet does not provide letters by which an idea of its nature may be conveyed from one person to another.

"Billy owl" is the name by which this, our smallest owl, is known to everyone, and the name seems to fit him admirably. As he sits calmly on a fence post, eying the chance passer-by out of half closed eyes he has a comical, yet sleepy expression that always attracts attention. The "forty-niner" and the eastern tourist alike regard the "billy owl" as a warm friend rather than as just a harmless bird.

Civilization, cultivation, and squirrel extermination have now crowded these little owls farther and farther out to the edges of the Fresno district, to the west side plains and a few other unsettled areas. When these agencies have left no room for them anywhere in the valley, then Fresno County will have lost not only a most interesting bird but a very useful one as well, for the species lives

almost entirely upon mice, beetles, and other creatures injurious to crops. The birds have been observed flying around arc lights, catching the large insects that are attracted by the glare. These lights form a feeding ground that is otherwise monopolized by the bats.

At some time in the month of April, occasionally later, a pair of burrowing owls may be seen sitting contentedly at the mouth of a burrow formerly occupied by some large rodent, and at such times it is safe to assume that housekeeping has begun in that underground home. Possibly, in some cases the former tenant departed rather unexpectedly and through no wish of his own, but in any event the owls are much to be preferred to ground squirrels as neighbors.

Large quantities of dry, broken-up, horse manure cover the mound at the entrance to one of these humble homes, and a trail of the same material leads down the windings to the underground chamber, where from six to eleven, nearly round, white eggs lie on a thick bed of this apparently indispensable article. Sometimes these nests are scarcely two feet underground, and again twelve feet of tunneling will fail to bring an inquisitive ornithologist to a position where he can examine the cavity; but it is never too deep to keep out fleas, and a nest that is not conspicuously infested with these pests is exceptional.

The author and two companions, in an effort to examine a nest of this bird, once dug horizontally just eighteen feet, but to a depth of only twenty-four inches, and we were rewarded by finding only a single fresh egg. Within two feet of the egg and crawling blindly toward it, was a very young squirrel that had probably, at our approach, taken refuge in the first burrow that it could reach.

A few of these interesting little owls may still be met within cultivated areas, where they nest in waste fields and along roadsides; but their numbers are limited and it seems only a matter of a few more years until we will be unable to number the Burrowing Owl among the birds of the Fresno district.

#### ROAD-RUNNER. *Geococcyx californianus* (Lesson).

Although the favorite haunts of this strange bird are to be found along the rough, brush-covered hills, a few stray birds may be met with from time to time in the vineyards in the most highly cultivated parts of the valley. Until the present season (1912) I had observed only lone birds in each instance, but this spring several pairs were seen at different places between Fresno and Sanger.

I have noted Road-runners along the San Joaquin River near Lane's Bridge, and on December 6, 1905, one individual was seen near the New Hope school house north of Wheatville. April 14, 1906, another was observed in the Barton vineyard, east of the city.

Several times during April and early May of this year I noted single birds or pairs about vineyards in the vicinity of Lone Star. As the custom of planting fruit or ornamental trees around the farms and along ditch banks has furnished ample concealment, it seems probable that a few pairs may have nested in the valley.

June 11, 1912, a Road-runner was seen to emerge from a row of eucalyptus trees at the roadside. It was immediately pounced upon by a pair of Western Kingbirds, which followed it as it turned, twisted and dodged, running whenever an opportunity was afforded. The angry Kingbirds kept up a continual chatter

as they swooped viciously at the big fellow. At my too near approach, the Road runner made off down the road a few steps and dodged into a vineyard. As it turned I saw some object held in its bill and thought it looked very much like a nestling bird of some sort; at any rate the plunder was so valuable that the sprinter was willing to risk a severe beating from the Kingbirds in order to make away with it.

CALIFORNIA CUCKOO. *Coccyzus americanus occidentalis* Ridgway.

Cuckoos occur during the summer months in the willow thickets along the San Joaquin River and a number of the larger canals. They are not much in evidence, and their retiring habits make it difficult to determine in what numbers they are present, but they surely cannot be called common at any time. Their call note, a half-subdued "kuk-kuk-kuk", is sometimes heard during June or July from a tangle of willow brush and vines, but the bird is actually seen much less often.

July 4, 1907, a Cuckoo was seen several times in a willow tree near the river, a short distance above Lane's Bridge. There may have been a nest nearby, as this bird was remarkably fearless and came within less than twenty feet of me several times, at intervals giving voice to its call when perched on a branch in plain view. Six days later I heard the same call from a thicket on Fancher Creek some six miles northeast of Fresno.

In all my prowling about the ditches near Clovis I never but once found a nest of the California Cuckoo and the discovery of that one was entirely accidental. July 10, 1902, while passing a small, somewhat isolated, willow that stood at the very water's edge in the Gould ditch south of Clovis, I thought I saw a nest, and upon stepping around the tree for a better view, a Cuckoo, with an unsteady flight, not unlike that of a nighthawk, flew down the ditch to a place of concealment. Just nine feet from the ground, at the junction of the trunk and the first branch, was a bulky nest of coarse twigs, lined with willow catkins, in which rested two small birds. They were nearly black in color, with the feathers not yet through their sheaths, this giving the downless little creatures a rough, almost thorny, appearance. From the position they occupied in the nest their bills pointed skyward. When I picked one of them up he clung to the nest lining uttering a faint squeaking note. The parent bird was not again seen or heard during my examination of her home.

BELTED KINGFISHER. *Ceryle alcyon* (Linnaeus).

The ninth and tenth days of August, 1905, the author spent, in company with two companions, along the San Joaquin River a short distance below Friant. At that time Kingfishers were rather common, and were often seen flying along the course of the stream, or perched either singly or in pairs on dead branches overlooking the water. Their rattling calls were frequently heard. It is possible that they may breed in small numbers in the banks that are so numerous tenant-ed by Barn Owls, but their presence there has never been detected during the nesting season.

In late September a few of these birds may sometimes be found along some of the larger irrigation canals, fishing for frogs or minnows near the headgates. September 21, 1903, one was observed about two miles north of Fresno, and the

following day the same one or another near the same place. April 24, 1906, I observed a lone individual flying along the Gould ditch near Clovis. July 25, 1912, another was seen perched on a dead branch over a muddy slough in the Kings River bottom above Centerville.

WILLOW WOODPECKER. *Dryobates pubescens turati* (Malherbe).

Willow Woodpeckers are not very common anywhere in the Fresno district, being most abundant, from what I can learn, in the oaks throughout the region south of Riverdale. The species was observed near this place July 13, 1911. Individuals are to be met with almost anywhere in the valley during the winter months, but nearly always only a single bird is observed. They frequent cottonwoods and willows along ditches and canals, but being of rather a quiet nature, are easily overlooked. They crawl along the lower sides of branches, now and then tapping gently or uttering a half subdued "squeep".

This species has been observed near Fresno, March 6, 1903, at Clovis, December 17, 1907, below Academy on Dry Creek, March 26, 1906, and along the river near Lane's Bridge, where a few may possibly breed.

NUTTALL WOODPECKER. *Dryobates nuttalli* (Gambel).

Miss Winifred Wear records this little woodpecker from Laton, April 17, 1909, and from Riverview, April 27, 1907. It occurs not uncommonly in the oak belt of the hills along the eastern part of the valley.

RED-BREASTED SAPSUCKER. *Sphyrapicus ruber* (Gmelin).

Among the birds in the collection of Miss Winifred Wear there is a fine specimen of this sapsucker that came into her possession November 16, 1910, under rather unusual circumstances. One of the children in her school, knowing of her interest in birds, brought the specimen, still alive, to the schoolroom. The child was a foreigner and was unable to give a very clear account of its capture, but said that her brother-in-law had had the bird picketed in his yard for several days. It would probably not have lived many days longer, as there was a bad wound in one wing. The bird, a female, was identified by Mr. Grinnell as *Sphyrapicus varius daggetti*; but the A. O. U. Committee has not approved of this name.

A single bird was seen by the author in one of a row of walnut trees by the roadside several miles northeast of Fresno on December 25, 1911. This is the only one ever seen by him in the valley.

CALIFORNIA WOODPECKER. *Melanerpes formicivorus bairdi* Ridgway.

This is another bird that, through lack of suitable environment, occurs as a straggler only, within the limits of the region under consideration. A noisy, abundant, and conspicuous resident of almost the entire foothill region along the eastern side of the valley, it is not surprising that occasionally a venturesome individual strays below the usual habitat, but even in such cases it seldom wanders far. Usually its presence in the valley is noted along streams where oak trees extend their range farther out toward the plains than elsewhere. Along Kings River this woodpecker is often seen near Centerville, and sometimes follows down the river bottom much farther, but it has never been recorded as seen in the treeless areas and among the vineyards.

Dry Creek, below Academy, is another outlet from the hills that at times makes possible the occurrence of this bird, but in general the range of the California Woodpecker seems to correspond very closely to that of the oak trees. This species should be confidently looked for among the valley oaks in the southern part of the county.

LEWIS WOODPECKER. *Asyndesmus lewisi* Riley.

July 26, 1905, a Lewis Woodpecker was seen in a corral two miles east of Clovis. It was flying a few feet above the ground, and from the manner in which it twisted and turned it appeared to be in pursuit of some small insect that was not visible to me, although I was but a few yards away. Finally the bird alighted on the side of a barn where it looked like a huge swallow. It remained there for some moments chuckling to itself in an undertone.

Six days later I observed what was no doubt the same bird, as it was within one hundred yards of the barn where it was first seen. This time it flew into one of a row of poplars, where it remained quietly perched on a large branch.

July 13, 1911, while watching the hordes of blackbirds that swarmed about the overflowed area near Wheatville, I was a little surprised to see a large bird that was at once recognized as a Lewis Woodpecker. It flew up from the bottom of one fence post and alighted near the top of another nearby. Although there was a sheet of water covering the ground for miles around, yet there was quite a growth of oak timber and willows that extended away toward Summit Lake; there was also much country to the eastward where this species might be found to occur commonly.

March 28, 1912, while driving along the road in Scandinavian Colony, a Lewis Woodpecker flew from a fence post and attached itself in a vertical position to the gable end of a building.

May 3, 1912, a fine, richly-colored individual was noted in a willow grown area between Fowler and Del Rey. After a short flight it perched in a willow tree, where it remained while I drove the car directly under the tree. I hardly think any of these records indicate breeding birds.

RED-SHAFTED FLICKER. *Colaptes cafer collaris* Vigors.

This Flicker is the only member of the woodpecker family that can be called an abundant species in the vicinity of Fresno, and each year the birds appear to become more numerous.

Trees along the irrigation canals are used for roosting places and for concealment, but the Flickers feed upon the ground in large numbers, especially in the fall and early winter. They often spring into the air from under the very feet of a hunter, the suddenness of their appearance and their querulous call at such times being quite disconcerting.

Ants seem to be the favorite food of these birds, and it is no uncommon sight to see two or three Flickers on the ground near an ant hill greedily disposing of the occupants as fast as they appear. Old decaying logs are also carefully worked over at frequent intervals, as well as the rough bark of cottonwood and willow trees.

Unfortunately these handsome birds have fallen into disfavor among a large number of both city dwellers and country residents, on account of their habit of

drilling holes in the gable ends of buildings. When once a house has been selected it seems that nothing short of death will cause them to cease their drilling operations until one, and in some cases three or four, holes have been cut through the outer wall of the building. Whether these holes, which are generally made in the winter, are excavated for roosting places or simply through a sort of nervous energy seems a matter of doubt; but certain it is that the birds spend much time in them as soon as they succeed in completing their work. It is a common sight, on rainy days, to see a Flicker's head peering out from his open doorway.

As the trees in the city and along the canals only offer an occasional dead stub suitable for these birds, the great majority of our Flickers repair to the foothills and to the heavier timber along the river to nest.

May 6, 1910, a Flicker was flushed from a small willow stump not over five feet high. The cavity was about eight inches deep and held six heavily incubated eggs that rested on the dry, rotten chips at the bottom. This stump was near the Gould ditch, two miles south of Clovis, and with one exception furnished the only record of this species breeding in that vicinity, so far as I have been able to learn.

April 7, 1911, I noticed a great quantity of chips at the base of a cottonwood tree near Lane's Bridge. This tree was used as a gate post, and for a height of about eight feet was green with not a few branches of new leaves, but for a distance of four feet or more down from the top it was quite dead. In this dry part, about eleven feet from the ground, a pair of Flickers had excavated a nesting cavity fifteen inches deep and nearly eight inches in diameter at the bottom. A visit to this nest April 29 revealed one of the birds at home and a fine set of seven fresh eggs that are now in my collection.

April 30, 1910, I flushed two Flickers from nesting cavities, one twenty feet up in a cottonwood, and the other in a knot-hole half that height in an oak. May 18, 1908, a brood of half-grown young were found in a hollow sycamore branch near Letcher.

This species is frequently called "yellow hammer", a name that was, no doubt, brought out by homeseekers from across the Rockies.

**TEXAS NIGHTHAWK.** *Chordeiles acutipennis texensis* Lawrence.

"Gee! there goes an old bullbat. I haven't seen one of them since I left Missouri." It was late one April afternoon, just as the sun was dropping behind a row of fig trees that concealed the western horizon, that I happened to be talking with an acquaintance who was working in a vineyard. A glance in the direction indicated revealed a Texas Nighthawk, flapping and tacking along in the apparently aimless manner so characteristic of this species.

This was not the first nighthawk that I had seen in Fresno County, as the birds are abundant summer visitants to the lower portions of the valley, being equally common throughout the vineyard sections and over the dry plains southwest of the city. The earliest records that I have for the appearance of this bird are those of two nighthawks observed five miles east of Fresno March 25, 1911, and a single individual seen a mile north of there the same evening. Mr. Joseph Sloanaker informed me that he observed the species, near Raisin, one day earlier than they were noted near the city; and it is possible that I could have made earlier records on several other occasions had I been able to get out into the country

during the last half of March. By the end of the first week in April nighthawks have usually become quite numerous, but it is not until the first half of May is gone that they begin nesting in any considerable numbers. During August these birds are very conspicuous, and the author has sometimes observed literally hundreds of them flying about a certain alfalfa grown swale near Clovis. Many of these, no doubt, were immature birds, which remain with us until their first fall migration. This usually occurs in early September. I have never observed this species later than September 18 (1905) when a lone nighthawk was seen flying over a vineyard near Clovis.

Preparing a nest in which to deposit her two eggs is not a difficult task for the female nighthawk, as, in every case that has come under my notice, the eggs rested on the bare, dry earth with not a vestige of nesting material either under or around them. It is a hopeless task to look for these eggs unless the parent bird is flushed from them, and even when the angry birds have revealed almost their exact location it sometimes requires no little careful hunting to detect the eggs, on account of their striking resemblance to small clods. When disturbed on her eggs the female usually makes a purring noise and flies but a short distance when she again alights; if forced into the air she is soon joined by her mate, who is often more demonstrative than the female and darts around near the intruder, frequently giving a peculiar clucking call.

As the great majority of our nighthawks nest in the vineyards, they are, no doubt, frequently disturbed, and possibly this may account for their eggs being found in late July, as recorded beyond.

Below is given a list of the few nests observed by the author, nearly all being found by flushing a bird at a time when nighthawks were farthest from his thoughts.

May 15, 1906; two eggs; one abnormal in shape and infertile, the other containing small embryo. Eggs at base of vine in vineyard. Ground very dry and hard. Both birds unusually bold.

July 2, 1906; two eggs; good-sized embryos. Eggs on soft ground at base of a sunflower growing in a field of melons. Bird flushed.

May 27, 1907; female flushed from two slightly incubated eggs that rested in a very slight natural depression about one foot from the stump of a large vine. These eggs were in the shade, as all others have been; it seems possible that the incubating birds move their eggs around in order to be protected from the direct rays of the sun.

May 26, 1911; two considerably incubated eggs on bare ground in vineyard. Bird flushed at close range.

July 21, 1911; two eggs; incubation advanced. Bird flushed from bare ground, between two vines in vineyard.

Mr. J. D. Clark has sent me nighthawk eggs from near Letcher that were found on small knolls in a pasture where there was little or no protection.

As the nighthawk seems to have few enemies it will doubtless continue to be an abundant summer visitant to this part of the San Joaquin Valley for years to come; and it should be a welcome visitor for it feeds on a class of insects that are, to a great extent, ignored by other birds. When night begins to spread her veil of darkness over the fields and vineyards a host of winged creatures come out

from their hiding places, and who can estimate the number of moths, mosquitoes, flying ants, and other insects that even a single nighthawk consumes before it ceases its hunting to perch lengthways, through the daylight hours, on some dead willow branch!

VAUX SWIFT. *Chaetura vauxi* (Townsend.).

Late in the spring, small, grayish-colored swifts are sometimes seen flying over, evidently in migration, as they are always traveling northward. They row along, alternately beating their wings and then sailing for a few yards, from ten to thirty feet above the earth. I have never observed more than two together; and I scarcely get more than just a fleeting glimpse of them, as they are silent and give no warning of their approach. A single individual that flew over on May 20, 1903, was clearly seen, as were two others observed near Clovis April 23, 1908.

While records made from birds seen in flight are liable to be questioned, and are to be discouraged in most instances, yet in this case the writer feels quite satisfied as to the identity of these birds. They were certainly none of our swallows, and bore no resemblance to the White-throated Swift, observed in June about the rocky cliffs above Tollhouse.

BLACK-CHINNED HUMMINGBIRD. *Archilochus alexandri* (Bourcier and Mul-sant).

While the presence of this species in the Fresno district is unquestionable, its status is yet in doubt. Nests, supposed by the writer to belong to this species, have been found in June and July. Exact determination awaits actual collection of birds with nests. The females of the various species of hummingbirds are scarcely distinguishable at any distance.

ANNA HUMMINGBIRD. *Calypte anna* (Lesson).

In the author's opinion this hummer cannot be considered common anywhere in the Fresno district. It is, however, sometimes noticed about gardens in the summer, and becomes fairly numerous about the blossoming eucalyptus trees in the early winter, especially in certain parts of the city. During the month of November their squeaking notes may sometimes be heard as the little fellows fly from tree to tree or perch on the telephone wires. I have observed this species, together with one or two other hummingbirds, around the wild tobacco blossoms in the foothill canyons near Letcher in May; but their appearance in any numbers seems to be confined to the blossoming period of the eucalyptus trees.

RUFIOUS HUMMINGBIRD. *Selasphorus rufus* (Gmelin).

After seeing many green colored hummingbirds I was surprised and delighted one warm spring afternoon to see a large red hummer fly to a lilac bush in the yard of my father's place near Clovis. In his flight he made a sound like that produced by an empty rifle cartridge thrown swiftly through the air.

It was the 30th of March, 1907, but the day was one of those bright, warm, balmy ones that bring the migrants along in large numbers, and as the sunlight fell full on this tiny bird's plumage it glistened like burnished copper. I thought I had never seen so beautiful a bird, and was regretting that he was resuming his journey after only a few seconds pause, when he again came to a standstill, this time perching on a small umbrella tree not over thirty feet from where I was

standing. At that distance he appeared to be wearing a red jewel at his throat as it flashed beautifully at every turn of the bird's head. Within the next five minutes the hummer made half a dozen trips to the lilac bush and back to the tree, and finally came to a big pink rose, almost within arm's reach of where I stood enraptured. Probably if red hummingbirds were as common here as green ones, they would, in time, cease to be objects of wonder and admiration, but even now the sight of a Rufous Hummingbird whizzing northward in the first spring days fills me with an almost irresistible desire to go afieid.

These little birds do not migrate through the valley in large numbers, or if they do they are much less conspicuous than would seem to be the case, judging from the one or two that are generally observed in the spring from the third week in March to April 2 (1906).

WESTERN KINGBIRD. *Tyrannus verticalis* Say.

To the uninitiated the name "kingbird" as applied to any of our local birds would be almost meaningless; but mention "bee martin" and every boy knows at once that we refer to that fearless tyrant of the air that once established in any favored place will tolerate no larger bird within a given radius of its chosen grounds.

Western Kingbirds are generally distributed in summer throughout all that portion of the San Joaquin Valley that I have been fortunate enough to visit, and they range well up into the foothills also. They appear equally at home throughout the cultivated areas and in the sparsely settled districts, and since their food seems to consist mainly of various insects and bugs, and since these, in one form or another, are not difficult to obtain, this valley supports a very large population of kingbirds.

In some sections this species has fallen into bad repute because of its fondness for bees, but I do not think it is fair to assume that bees are especially sought for. They seem to be taken in numbers only when they are more in evidence than any other creature. One pair of these birds that I had an excellent opportunity to observe fed their family almost entirely on grasshoppers, one or the other of the parents bringing a big hopper to the nest about every ten minutes. Often in July and August it is no uncommon sight to see two or three dozen kingbirds, together with quite a host of other birds, perched on a wire fence at the edge of an alfalfa field, all busily engaged in catching the yellow butterflies that occur so numerouslly at times. In such places the birds fare so sumptuously that they soon become excessively fat. The precision with which one of these big flycatchers can swoop out upon and snap up a passing insect is really marvelous, and no desirable creature that comes within their vision need hope to escape.

The date of the appearance of our kingbirds in the spring nearly corresponds with that upon which the Bullock Orioles reach here, as will be seen by the following dates of spring arrival: March 26, 1905; March 23, 1906; March 27, 1908; March 29, 1911. With the passing of August these birds have nearly all disappeared and only an occasional one is seen after the last week in that month. In 1905 the last one was seen August 26, and in 1911 a single individual was observed near Clovis, flying toward the south, on September 4.

Never, in ten years of observation, have I known a pair of Western Kingbirds to nest in an orchard, as the eastern form is said to do so often; neither do

our birds like the dense foliage and swaying branches of the willows bordering the canals and ditches. The majority of them find nesting sites in places provided by man's agency. Formerly they resorted to the framework of flumes, windmills, outbuildings, and even to the tops of fence posts; but of recent years the rural telephone lines that have thrown their network of wires and poles all over the valley have provided nesting sites galore, and of a kind seemingly exactly suited to the requirements of these birds. Nearly all the smaller lines are supported on poles without crossbars, the majority of these poles being about four inches in diameter and extending to a height of about sixteen feet, excepting where the lines cross entrances to farmhouses or intersecting roads, in which case the wires are raised several feet to permit the passage of derricks and other tail machinery. This additional height is attained by nailing two two-inch pieces to the original pole on opposite sides, thus leaving a four inch platform protected on two sides, in which a nest just fits snugly. A drive through the country during the summer months now reveals a pair of kingbirds tenanted in nearly every such pole.

It must not be understood, however, that trees are never resorted to, as not a few pairs find congenial homes in trees around dwellings. They are nearly always encouraged to remain, as they are of great service in driving away hawks, setting up a alarm at the approach of any sort of marauder. One pair that nested near my home were fearless in driving away any bird that chanced to pass anywhere near, and I often saw a poor, clumsy Turkey Vulture tumble nearly to the earth in unsuccessful attempts to elude its pursuers. Doves escaped only by their very rapid flight, although often chased over a quarter of a mile. After one of these exploits the male always returned triumphantly to the nest, where he, no doubt, received much praise for his bravery, judging by the animated conversation that took place.

Nest building begins about the first of May, and kingbirds may be found nesting all through this, and the following month. My earliest records are May 6, 1907, a set of five slightly incubated eggs, and May 1, 1910, a set of four in which incubation had begun.

Four or five eggs are the usual complements but some females deposit very small sets at times. On June 11, 1906, I found a nest with three heavily incubated eggs; the next season, in a tree not far from that place, I found one of these birds incubating two eggs on May 26, and no more were ever added. It is quite probable that this second set was the product of the same female that laid the set of three the previous season.

One season a pair of kingbirds, after spending several days in noisy discussion regarding several sites for a nest, finally began on June 3 the work of house building on a windmill. On the morning of July 4 the last one of their five offspring left this home, thus establishing, for a certainty, the length of time required to complete a nest, deposit a set of eggs, and get a-wing a family of their kind.

ASH-THROATED FLYCATCHER. *Myiarchus cinerascens cinerascens* (Lawrence).

The occurrence of this flycatcher along the ditches near Fresno late in May each season would seem to indicate rather late migration, later than that of any other bird of which I have records. After a brief sojourn lasting hardly more than

a week they gradually disappear, and none of them have been found nesting within the Fresno district, although it would not be surprising to find a breeding pair some summer along the river. August 9 and 10, 1905, I noticed several apparently immature birds along the river below Pollasky.

May 25, 1906, Ash-throated Flycatchers were noted in some numbers along the Gould ditch, south of Clovis, as also on April 21, 1908, while May 21, 1911, they were again present. The breeding season must be a brief one with this species as it appears again during the first week in September. In 1906 I saw a single individual in an orchard September 6, and collected a specimen near Clovis September 4, 1911. This was a bird of the year with much down in its plumage, and was surprisingly fat.

During the time these birds are with us they frequent the willows along canals, peach orchards, and occasionally the dry weeds in neglected fields. They are quite silent in the fall, but at the time of their spring visits they sometimes utter their bickering challenge when too closely approached.

SAY PHOEBE. *Sayornis sayus* (Bonaparte).

Those who have not been so fortunate as to hear the song of a Say Phoebe have missed a rare treat. It may be that this song is heard more frequently on the birds' nesting grounds, but here in the Fresno district where the species occurs only as a winter visitant it is heard all too rarely. In fact, I was several years in the country before I ever heard it, and even then it seemed hard to believe that such a plainly clad little creature could be producing such a pleasing variety of warbling notes. However, the fact that this bird's desire to sing sometimes seizes it on a gloomy, dark, foggy December day, when even the Mockingbirds are silent, may have something to do with the pleasing quality of the music.

This Phoebe appears during the second or third week in September, and departs during the last week in March, my earliest and latest records being September 12 (1904) and April 1 (1906). Say Phoebes share with the Audubon Warblers a habit of catching flies from a window, sometimes spending days at a time near a house, where they make frequent quick flights from some perch to seize a fly that has appeared on the glass. I have noticed that the south side of a building is generally selected as a place in which to carry on these fly-catching expeditions. Probably these places are chosen on account of their food being more plentiful, rather than from any desire of the birds to perch in the sunlight.

BLACK PHOEBE. *Sayornis nigricans* (Swainson).

Black Phoebes are common residents of nearly all the lower portions of the valley but can hardly be considered very numerous anywhere. I have always thought that there must be a fall migration, involving, perhaps, only the young of the year, as the number of phoebes never seems to increase or decrease from year to year. During the winter months these birds are more in evidence than at the time of nesting, but they are not at all conspicuous at any time. So far as my observations go they have no preference as to the type of country they frequent, the chief requisite being the proximity of water. I have observed Black Phoebes sitting quietly on a fence wire near some foothill creek, and have found them along the irrigation ditches near Clovis, while they seem equally at home around the large sloughs on the west side.

Nests of these birds are sometimes fastened to the walls of deserted cabins, and occasionally a pair will build in an old well if they can gain entrance, such nests being from six to fifteen feet below the surface of the ground. The most common nesting sites, however, are the large stringers of bridges, where the nest is securely fastened above the water. I have never known this species to choose a place where there would be support for the bottom of the nest, as the Eastern Phoebe is said to do. Our bird attaches its wall pocket to the vertical surface of a plank, and so securely is it fastened that it will often break apart rather than give way. This species often nests on the faces of rocks in the hills, but such sites are almost entirely wanting in the Fresno district. I have found one or two nests fastened to the partly dead trunk of some large tree, but it is safe to say that nine out of every ten birds choose the protection afforded by bridges, where mud is easily secured, and horsehairs as well, for these two ingredients enter largely into the construction of the nest. The lining consists of a scant layer of dry grass stems and sometimes a few long horsehairs, upon which rest the four, and sometimes five eggs. It is interesting to note that when four eggs constitute the set there are generally three that are unmarked and one that is quite heavily spotted with red dots on the larger end, but when there are five in the set the additional egg nearly always has just a few very fine spots like dust. My observations show that nearly always the spotted egg is the last one to be deposited. If that is the rule, then should a set of seven or eight eggs happen to be laid we might expect one or two specimens as heavily spotted as a kingbird's egg.

I have found eggs nearly ready to hatch on April 5 and fresh ones June 15, so the nesting period may be said to extend from March 1 to July 1, with probably two broods reared in a season, in some cases at least.

WESTERN WOOD PEWEE. *Myiochanes richardsoni richardsoni* (Swainson).

Wood Pewees have been observed by the author only during the fall migration, and are even then not common. September 11, 1905, a lone Wood Pewee was seen in a large patch of tall, dry weeds near Clovis, where I had a good opportunity of observing its feeding habits. Perched on a commanding site on some weed stalk it watched listlessly until a tiny insect, often invisible to me, came near, when the bird at once was all attention and with a quick flight snapped up the insect and returned to its former perch.

September 4, 1911, I saw several of these little pewees along the Gould ditch near Clovis, where they were perched on dry branches near the tops of the trees. From these positions they sallied forth to seize any luckless insect that chanced to pass their way, the snap of their bills being clearly audible at a distance of fifty feet or more. It was interesting to note that although their prey often led them some distance away, yet they always managed by two or three short, jerky flights to return to the same perch from which they had started, when with a half-subdued whistling "phe-yeer" they settled down to await the appearance of another insect.

One specimen collected, an immature bird with rusty patches in the plumage, proved to be very fat.

CALIFORNIA HORNED LARK. *Otocoris alpestris actia* Oberholser.

In former years, when large tracts of land north and east of Fresno were

devoted to grain farming, the California Horned Lark was one of the most abundant birds to be found in the district; but it has not responded favorably to the settlement of the country and is now rare in many parts of the valley. It is still to be found in numbers along the west side plains, and wherever tracts of land are to be found that have not been planted to trees or vines. The barren, uncultivated, alkaline plains southwest of the city now afford a home for the majority of our Horned Larks, while the foothill ranges to the east are proving attractive to a goodly host also. This species did not abandon without protest the areas it had occupied for so long, remaining even when section after section had been converted into vineyards; but when the vines had attained a growth of two or three years the ground was covered to such an extent that the larks were forced to withdraw. It seems that for feeding and nesting these birds must have dry, barren ground almost free from shrubbery. Scattered out in pairs during the breeding season, these larks often gather in immense numbers throughout the winter.

In driving along the road toward the river I have sometimes observed a Horned Lark in the shade of every fence post for miles at a time during the mid-day hours. It is interesting to watch these little birds at their pre-nuptial antics. Especially is this the case during the warm, bright, sunshiny days in February, when a male will frequently perch on a clod and pour forth his song time after time in a wiry, mechanical sort of way, beginning with a squeaky "chick-chink-chick," slowly at first but becoming more rapid until it ends in a sort of trill. If approached too closely the vocalist will reluctantly leave his clod and strut away across the ploughed ground in a dignified manner, but he seldom goes far and will at once return and begin again his monotonous song as soon as the intruder has passed by.

At times the enthusiasm of these little creatures carries them far above the earth, where they pour forth their song in true Skylark fashion as they mount higher and higher until they become mere specks or have disappeared entirely. In a short time, however, they come tumbling earthward again, generally alighting within a few feet of the place from which they took wing.

In the fall and winter the immense flocks of these birds that sometimes assemble in stubble fields break into the wildest confusion at the appearance of a Marsh Hawk, until the air seems to swarm with dozens of the birds, each calling in their squeaky way.

I have never been able to satisfy myself as to whether more than one brood is reared in a season, but have about decided that in some cases two families are raised. However, the center of my field of observations has been in the highly cultivated districts where it is quite probable that not a few of the earlier nests are destroyed by cultivation and the larks compelled to deposit second sets, while, under ordinary circumstances, only one set would be laid. As it has not been possible to determine, with any degree of accuracy, which of the sets found were of second laying I shall enumerate some of the nests found and allow the reader to draw his own conclusions.

Nests of this species are built most often in summer-fallow fields, but sometimes in very young vineyards, hay fields from which the crop has been cut, and on the uncultivated plains. Sometimes they are found at the base of a clod or a

small accumulation of trash, but in the majority of cases that have come under my observation a small weed or plant, frequently the California poppy, is chosen, probably more for the shade it affords than with any thought of concealment.

I have found eggs on the bare, dry dust in a slight hollow; and again an elaborate, deeply-cupped nest is constructed of dry grass-stems and rootlets. As the birds, nests, and eggs all blend wonderfully with the ground, they are among the most difficult nests to find with which I have had any experience. A complete set of eggs in many cases numbers three, although four are not rare.

Various grain and seeds seem to be the staple articles of diet with these birds, which feed entirely upon the ground.

#### NESTING DATES OF CALIFORNIA HORNED LARK

	Date		Contents of Nest		Remarks
April	12	1902	3	eggs	small embryos
"	22	"	3	young	half grown
"	27	"	3	eggs	small embryos
May	13	"	3	"	"
"	19	"	3	"	begun
"	21	"	3	"	far advanced
June	5	"	3	"	begun
April	9	1903	3	"	fresh
"	11	"	2	"	"
May	12	"	5	"	slight
April	2	1904	3	"	nearly ready to hatch
"	4	"	2	"	good sized embryos
"	6	"	3	young	several days old
"	21	"	3	eggs	small embryos
"	25	"	3	"	slight
"	30	"	3	"	well begun
May	12	"	4	"	small embryos
"	13	"	4	"	good sized embryos
April	17	1905	3	"	nearly complete
"	30	"	4	"	well begun
May	1	"	4	"	begun
"	5	"	4	"	well begun
"	17	"	3	"	advanced
April	23	1906	3	"	begun
"	28	"	5	"	advanced
"	12	"	3	"	"
May	9	"	4	"	begun
June	6	"	3	"	2 addled, 1 far advanced
April	11	1907	3	"	small embryos
"	20	"	4	"	begun
"	28	"	4	"	very slight
May	5	1908	2	"	deserted
"	6	"	3	"	advanced
"	9	"	2	"	fresh
"	10	"	3	"	"

**YELLOW-BILLED MAGPIE. *Pica nuttalli* (Audubon).**

The only claim of the Yellow-billed Magpie to a place on this list is through a record made by Miss Winifred Wear, of a bird observed near Riverview on the San Joaquin River northwest of Fresno. It has also been reported from Laton.

On account of the increasing rarity of this species it might not be out of place to mention such localities as are now frequented by magpies in this part of the state. Goldman (CONDOR x, 1908, p. 204) mentions a small colony near Summit Lake. The author can record them from Cottonwood Creek in Madera County about ten miles west of Friant, where, however, they must be considered rare, and it is doubtful if half a dozen pairs could be found along the whole length of the creek.

Near Letcher there is a small colony that has all but disappeared during the past few years, on account, no doubt, of the conspicuousness of the birds and of the fact that they nest very near a much travelled road. Then, too, the presence of a fig orchard nearby, where their visits may not be encouraged, might also explain the diminution in part. A visit was made to this colony on April 5, 1908, for the purpose of securing a set of eggs if possible, but of the seven or eight nests seen, only two were accessible to me. These were placed about forty feet from the ground in the top of a cottonwood tree near the creek. In appearance these were like the usually described nests of this species, being large hooded structures with a thick cup of mud for the nest proper, this being lined with dry grass stems and horsehair. These nests were about six feet apart, and one held a single fresh egg, while the other appeared to be ready for occupancy. The owners were exceedingly shy, scolding from a distance but not to be approached nearer than one hundred yards. All the other nests were placed in the extreme tops of sycamore, oak, and cottonwood trees, or on the ends of horizontal limbs from forty to sixty feet from the ground, and on such small branches that it would have been folly to have attempted to examine them. April 19, after an unusually hard ride on my wheel, I climbed to the two nests in the cottonwood, but was much disappointed to find them deserted and the one egg gone.

April 10, 1910, Chester Lamb, Chas. E. Jenney, and the writer again made the trip to Letcher, finding five or six wild, unapproachable birds, and only two nests that appeared to be tenanted. One of these could not be reached. After a difficult climb up a slender sycamore, Mr. Lamb found that there were no eggs in the second nest, although it was newly lined with horsehair; the two or three other nests that we managed to examine were in a dilapidated condition.

Another colony of magpies is known to exist farther up in the hills, in a sparsely settled district where they have been able to hold their own for the past thirty years, so I am informed by old inhabitants. In passing through that district on May 18, 1908, I observed a large number of the birds scattered over the country for two or three miles, and observed a number of nests that were from fifty to seventy feet up in some giant cottonwoods near a creek. Many bobtailed young were observed that were, apparently, not long out of the nest.

At a distance an adult magpie, as it floats along from one oak tree to another, bears a really striking resemblance to a Phainopepla, except in size.

**BLUE-FRONTED JAY. *Cyanocitta stelleri frontalis* (Ridgway).**

During the winter of 1900-01 large numbers of these jays invaded the valley, being found literally by hundreds everywhere eastward from Fresno, where they frequented the trees bordering the vineyards, roadsides and ditches. Their large size and gay plumage rendered them very noticeable, and no doubt not a few of their number were missing when the blue-coated host returned to its Sierran home. The species has not been observed in the valley since that time.

**CALIFORNIA JAY. *Aphelocoma californica californica* (Vigors).**

The California Jay being a bird of the foothill region is not of common occurrence in the vicinity of Fresno, but it is found at several points within the limits of this work. It is often met with in the willow thickets along the San Joaquin River, especially in the vicinity of orchards, and comes down Dry Creek, east of Clovis, to within about six miles of that place. The river bottom below Centerville is another place where jays are to be found. It would not be surprising to find this species at Laton or in the oak region near Riverdale, although I have not observed them at either place.

A nest found near Letcher April 5, 1908, situated eight feet from the ground in a partly dead willow near the creek, contained five eggs in which incubation was nearly complete. Another nest found below Academy on May 9 of the same year, held small young, while a third nest, found May 18, 1908, held three eggs. From this data it would seem that the nesting time of this bird is from the last of March through May, at least.

I have several times heard the call of this species in a large willow-grown swamp near Sunnyside, east of the city, but was never certain that the notes were not produced by a Mockingbird. As the California Jay is not to be found anywhere in the vicinity of Fresno in sufficient numbers to exert much influence over other species, I will not attempt to take up the discussion of its habits or alleged destructiveness.

**WESTERN RAVEN. *Corvus corax sinuatus* Wagler.**

On only two or three occasions has the Raven been identified in the Fresno district, and it must be considered rare. It occurs on the plains to the southwest of Fresno, and along the eastern base of the Coast Range Mountains, being observed by the writer principally in winter.

April 12, 1902, a nest with heavily incubated eggs was found in an old deserted barn about fifteen miles northwest of Wheatville. This nest, fastened rather insecurely in the forks of an upright post about twelve feet above the floor, was composed of dry, bleached sage-brush sticks, and lined with wool and burlap shreds. A great heap of sticks, nearly four feet high, below the structure, indicated with what difficulty the Ravens had made the foundation to their nest.

Two or three years later I again visited the place and found that, from all appearances, campers had spent several days in the barn, and had not only burned up the mass of sticks on the ground, but had torn down the nest as well for fuel.

**WESTERN CROW. *Corvus brachyrhynchos hesperis* Ridgway.**

Even the casual observer, it would seem, could hardly fail to be interested in this bird, especially as it is by no means a common species in the vicinity of

Fresno. Along the Kings and San Joaquin rivers it seems to be most frequently observed; and it is resident there, as Mr. Chas. E. Jenney informs me that he has found several nests with eggs in the vicinity of Lane's Bridge.

I have often observed this species in March and April along the river, where they sometimes congregate in flocks of as many as thirty. Most often, however, they are to be seen as single individuals, pairs, or squads of four or five, flying out to some marshy place where they feed along the edge of the water, taking turn at watching from fence posts or tree tops. Occasionally one will fly out of the river bottom to spend part of the day catching grasshoppers on the dry, hog-wallow land adjacent to the river. As these birds come and go at any time, one is sure to see a Crow tacking along near the knolls at almost any hour of the day. Early in the morning, and again before sundown, the black host assembles in the willows, preferably on some small island, where they caw, scold, and talk in animated tones. If some large hawk or heron appears two or three Crows always start in pursuit, and the large slow-flying birds must lead a rather strenuous existence when their lot is cast near the trysting place of a flock of Crows.

I have been much interested in what appears to be a sort of local migration that occurs in spring and fall, when Crows fly from the Sierras toward the Coast Range and vice versa. From February 9, to April 23, 1903, I saw numbers of Crows flying toward the southwest, passing near Clovis. December 19 of the same year one individual was observed flying in the opposite direction. All these birds are rather noisy, calling "h'waw, h'waw, h'waw", thrice repeated, or the note "caw", which is generally given five times in rapid succession, with a scarcely perceptible pause between the third and fourth.

March 5, 1906, opened with a raw, cold morning and a strong southeast wind blowing. While watching a flight of Turkey Vultures I heard the notes of a Crow, faintly at first but becoming more distinct. After a short time the call ceased to become any louder and then another was added. The one bird, which I occasionally saw diving down and then rising to about the height of the tree tops, was very noisy and continually uttered the note "cah" in a rather high-pitched, wiry voice. It was generally repeated five times, but once it was heard eight times in rapid succession. The other bird was evidently on the ground, and the first one seemed to be attacking it. I never had even a glimpse of this individual although its call was given almost as frequently as that of the other. It was a harsh, grating "car-r", generally repeated three times, but sometimes only twice, in a slow, angry tone. After some fifteen minutes the Crow in sight seemed to become tired of his exertions and flapped away toward the west and the cawing ceased immediately. I have thought that possibly a Raven was being tormented by a Crow, but as one of the birds was not seen at all it may have been a case of two Crows settling some disputed question.

Cunning, shrewd, unapproachable, except under cover, the Crows seem fully capable of holding their own against all enemies, and will doubtless be found scolding and quarrelling among the willow clumps along the river through many a windy March day in years to come.

DWARF COWBIRD. *Molothrus ater obscurus* (Gmelin).

Cowbirds, supposedly of this form, are known to visit this part of the San Joaquin Valley at times, but seem nowhere common. They probably do not breed

this far north as the writer has never found a Cowbird's egg in any of the hundreds of small nests examined during the past twelve years.

September 14, 1902, I was surprised to see three Cowbirds, apparently a male and two females, alight in a corral near Clovis, where they remained a short time and then suddenly flew away toward the south. I was within less than fifteen feet of them at the time.

July 13, 1911, I was enjoying a ride across the salt grass plains, when at a point south of Caruthers and east of Wheatville, I observed several blackbirds in some scattering straw left by campers in the shade of a large cottonwood tree at the roadside. As blackbirds were common everywhere these birds were given little notice until my attention was arrested by one individual that had a more erect, hurried walk than any of the others. It flew at our near approach and perched on a wire of a fence a few yards away, where I at once saw that it was a Cowbird, but unfortunately I had no means of securing it for more exact identification.

It may seem unwise to record these birds as the southern form of Cowbird, but the size of all four appeared smaller even than that of female blackbirds (*Agelaius*). Furthermore *obscurus* has been reported as far north as Bakersfield (Swarth, CONDOR, XIII, 1911, p. 161), so it is not a surprising occurrence that occasional individuals continue northward to Fresno.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus* (Bonaparte).

This handsome blackbird is of rather common occurrence in the vicinity of Fresno, being somewhat erratic in its appearance. It is often noted during the winter months. The large flocks of Brewer and Bicolored blackbirds sometimes have one or two Yellow-heads among them, and again the big fellows are seen by themselves in flocks of seven or eight birds.

It is probable that this species occurs more commonly along the west side in the alfalfa fields, but nearly all my records are from the region northeast of the city. September 7, 1905, a flock of seven Yellow-heads flew over, travelling toward the south, and September 4, 1906, four were seen flying in the same direction. January 12, 1903, two or three were observed in a large mixed flock, and one individual was noted with some Bicolors on April 2, 1905.

May 9, 1907, I found a small colony of these birds in a tule swamp east of Clovis, where they seemed quite at home among the many Bicolors that were nesting in the tall, dense growth of tules. I felt certain that I had at last found a breeding colony, but probably the birds were only transients as on a subsequent visit no trace of them could be found.

May 30, 1912, a colony of Yellow-heads was discovered among the rank tules growing along the roadside near Firebaugh. A number of brilliantly colored males sat on the telephone wires and on nearby swaying tule stems, the while going through a series of contortions that were not less amusing than the accompanying strident notes. It all had a meaning though, and was often answered in a similar manner by some bird concealed in the tules. Conditions seem favorable in much of that region for the nesting of this species in considerable numbers.

Two large tule ponds southwest of Fresno are usually the congregating place, and doubtless the nesting ground also, of a goodly number of these birds

each summer. They sing from the tops of the reeds, fly out to the nearby alfalfa fields, or glean around the corrals where, if not actually welcomed, they are usually tolerated or ignored by the busy ranchmen, who have no time to notice what is going on in the bird world around them, unless it affect their interests directly.

BICOLORED BLACKBIRD. *Agelaius phoeniceus californicus* Nelson.

At the present time the status of the Red-winged Blackbirds inhabiting Fresno County is not well understood, but for convenience and in the absence of specimens for comparison with birds from other parts of the state, they are placed under the above heading.

The writer has long been of the opinion that at least two forms of the Red-winged Blackbird occurred in the Fresno district, one being a permanent resident and the other, possibly, only a spring migrant.

Along the ditches and in the swamp holes of the thickly settled regions east and northeast from Fresno the resident blackbirds are apparently almost typical Bicolors, judging from the plumage; and this form also occurs commonly in many of the west side swamps where it breeds in large numbers. However, in March each year there appears in the salt grass pastures southwest of Fresno an assemblage of blackbirds that seem to differ in habits as well as appearance from those found elsewhere. The males, even when apparently fully matured, have the red feathers of the epaulettes broadly margined with buffy, while the females are very much lighter, especially on the under parts where the black streaking seems very narrow giving the birds a strangely pale appearance.

I have always been impressed with the tendency of these birds to go about in small silent companies, feeding among the cockle burrs and other weeds along the ditches and about the shallow ponds. There are certain characteristics, hard to describe, that to me make these birds seem quite unlike those found in other parts of the valley.

I have never been able to carry on investigations sufficient to determine whether these birds breed in this region or merely pass through in the spring. A series of specimens from the various parts of the valley taken through the four seasons would probably prove enlightening, but has as yet not been assembled. The writer, however, collected at random a female, an immature male, and an adult male, the three now being in the Museum at the University of California. In a recent letter Mr. Joseph Grinnell informs me that in point of plumage these specimens are quite typical of "Bicolor", but as regards measurements of bill they more closely approach the San Diego Red-wing. (See Mailliard, CONDOR, XII, pp. 63-70.)

The following notes refer to the resident Red-wings of whatever subspecies they may later prove to be. The earliest date that I have for the nesting of this blackbird is April 5, 1908, when a scattered colony was found in a growth of tules bordering small ponds caused by the overflow of a flume five or six miles east of Clovis. A dozen or more nests built among the partly dead stalks and averaging about one foot above the water, held eggs that varied from fresh to well incubated. From this date until the last of June—the 27th to be exact—fresh eggs have been found. Almost every clump of tules in the various sinks and ponds is made use of by nesting blackbirds, while in many instances a colony

will take possession of a grain field, building their light, basket-like structures amid the swaying wheat or barley stalks, from six inches to two feet above the ground.

Not infrequently this species departs from the usual customs that have been followed for so long, and nests in treetops. One such colony found May 25, 1906, was occupying some willows along a canal, one nest was fully thirty feet from the ground and resembled a kingbird's home, except that several long streamers of dry tule strips were left dangling and swaying in the breeze, making the nest very conspicuous. That this site was chosen from preference and not from necessity was clearly evident, as there was a growth of tules all along the edge of the canal, and a half section of wheat adjoining. Another colony chose nesting sites among the thick foliage of a long row of fig trees, the nests being situated from twelve to twenty feet above the ground. In driving along the road after the leaves had fallen from the trees I counted eighteen nests in a short section of the row. Almost under these trees was a small ditch in which water stood nearly all summer, and which was partly concealed by willows, tules, and sedges; but perhaps the close proximity of a schoolhouse had taught the birds to elevate their nests and conceal them as well.

Nests of the Bicolored Blackbird are well-woven, light but substantial, structures, composed of dry grass stems and tule stalks, plastered with mud and lined with finer dry grass. In probably ninety percent of the nests examined four eggs constituted the set. Sometimes, especially late in the season, sets of three are deposited, but out of hundreds of nests that have come under my notice I have yet to find a set of five eggs. Probably two or more broods are raised in a season, as a nesting colony seems to be in a continual state of operation for about three months in the year and nests with incomplete sets of fresh eggs are frequently found within a few feet of others that hold large young birds.

Throughout the winter these blackbirds rove about the valley seeking feeding grounds, often congregating in large numbers in fields that are being cleared of weeds, or following a string of plows, along with a host of Brewer Blackbirds.

Farmers regard this bird with considerable disfavor on account of its fondness for newly planted grain, and because of its attacks upon ripening Kaffir, or Egyptian, corn. In districts where large fields of alfalfa are under irrigation these birds are of much service in destroying various bugs and worms.

#### TRICOLORED BLACKBIRD. *Agelaius tricolor* (Audubon).

Tricolored Blackbirds, although occurring commonly in the Fresno district, are much more local in distribution than any of our other blackbirds; and while they scatter out over the greater part of the lowlands of the valley during the winter months, they appear to be confined to certain favorable sections when the breeding season is at hand. It is not unusual to find a few of this species associating with the large flocks of mixed blackbirds that are so often seen in winter, but for the most part the Tricolors seek no company aside from that of their own kind.

During the month of March great hordes of Tricolored Blackbirds fly northward in what is evidently a local migration. Every morning, from daylight until after sunrise, they pass over at frequent intervals; sometimes half a dozen birds

together and again in large compact flocks. If the weather is clear they fly at a height of over one hundred feet from the ground, but on foggy mornings they whiz along skimming just over the surface of the earth, in a flight that is very rapid for blackbirds. At such times they are entirely silent, in surprising contrast to the loose, straggling bands of Bicolors that go creaking along before dark on many a fall evening.

This species was found breeding on June 8, 1907, in a large clump of rank tules that were growing in about four feet of water in a pond above Letcher. There were some young birds, but in about two hundred nests there were either three or four eggs, with a few sets of five. All appeared uniformly and very highly incubated. The almost deafening uproar produced by these birds in an attempt to sing *en masse* was heard for two hundred yards and it was this wonderful medley of vocal efforts that attracted me from afar, although the tules were concealed by a dense canopy of willows. I have yet to hear the bird that can produce a more unmusical, strident series of notes than a Tricolored Blackbird, and when two or three hundred unite to vociferate in concert, the result absolutely defies all description—yet I would willingly listen to them for hours. The very harshness seems to appeal to a bird lover, when more musical bird songs would pass as commonplace.

Another large breeding colony was encountered on April 30, 1907, about eight miles north of Wheatville. For a more detailed account of the habits of *Agelaius tricolor* the reader is referred to THE CONDOR, IX, 1907, p. 177.

WESTERN MEADOWLARK. *Sturnella neglecta* Audubon.

As our Meadowlark is being made the subject of a special investigation the author will leave the discussion of its economic value to those more competent, and will simply state that this species has, in some manner, fallen into very bad repute with farmers throughout the county, who seem to unite in urging its destruction. Certain it is that these birds show a marked partiality for newly sprouted grain, especially oats, but to just what extent they damage these crops is a matter as yet not clearly determined.

In the areas that have been thickly settled this species has decreased in numbers quite noticeably during the past ten years, but it is still an abundant resident wherever large fields remain, or where grain or alfalfa ranches are to be found.

Scattered during the summer months in pairs or small companies, this species often assembles late in the fall in quite large flocks. October 10, 1905, just at sundown I witnessed a flight of Meadowlarks unlike anything I had ever seen. A very large flock of these birds, estimated at about one hundred and twenty-five, came sweeping in from a half-section of stubble, and settled for just a moment in an adjoining vineyard; then the whole mass arose again and in a compact body flew back to the stubble. In every movement this flight was suggestive of ducks and the flight resembled a flock of Sprigs coming in from some irrigated wheat field, settling for an instant on a pond and then again taking wing.

While Meadowlarks, no doubt, nest abundantly throughout the valley, I have never been able to find anything like the number of nests that would be expected to exist; but as they are very artfully concealed it requires most careful search to discover them unless the brooding bird is accidentally flushed.

May 18, 1902, during a very high wind that prevailed for the greater part of the day, I was surprised by a Meadowlark flying up almost from under my feet, and I soon found her nest among the rank grass partly concealed by a clod. As this nest was in a very damp location the lining was thoroughly saturated, and it seems hardly probable that the bird could have maintained a temperature sufficient to have successfully completed the task of incubation. There were five eggs of the Meadowlark in the nest, and two of the Valley Quail, all being slightly incubated.

About the middle of the following June I noticed a Meadowlark alight among some dry grass and select a piece of nest material with which she took flight toward an alfalfa field not far away. By watching where she settled I thought I had marked down the location of her nest, and this proved to be a correct surmise; for on June 26 I had little difficulty in flushing the female from a bulky, canopied nest in which there were five fresh eggs.

Other nests have been seen in alfalfa fields and among thick growths of weeds; but what I consider the most unusual site was located April 23, 1908, when a Meadowlark was plainly seen sitting on her nest while I was yet over one hundred feet distant. This nest was found near a berry patch, the ground having been plowed early in the winter, later a sparse, stunted growth of oats springing up. At the time the nest was found the oats were not over six inches in height, and so thin and scattering as to afford almost no protection or concealment. In a slight hollow, not over three-quarters of an inch in depth, were four eggs resting on the bare, damp ground, without a semblance of nesting material either over, under, or around them.

The song of the Western Meadowlark, heard just at sunrise on a bright February morning as the bird perches on a fence post, is one of the most pleasing and musical of all bird voices. The silencing of it by removing legal protection from the songster would be little short of a calamity.

**BULLOCK ORIOLE. *Icterus bullocki* (Swainson).**

The males of this species usually arrive in the vicinity of Fresno during the last week in March. This year (1911) the first one came on the twenty-fifth. In 1906 they made their appearance on the twenty-sixth, and in 1908 it was March twenty-eighth. Some of these first arrivals frequent the trees about town and those along canals in the country, while many small companies of from two or three to half a dozen may be found passing the time among the wild flowers and bushes on the grassy, treeless slopes near the river. It is nearly the middle of April before the females are noticeable.

The great majority of our orioles depart about the twentieth of July, or at the close of the nesting season. No doubt a scarcity of food during the hot, dry months of August and September is responsible for the short stay of these birds. Probably they scatter out and range up into the higher hills, as many summer residents do in the southern part of the state. This species has been noted in small numbers along the San Joaquin River during August.

My earliest record for a complete set of eggs of the Bullock Oriole is of a set of five found May 8, 1905, in which incubation was scarcely noticeable. From that date on through all of May and June the birds are busy with household duties. Four or five eggs generally constitute a set, but three is by no means an

uncommon number especially during June. Occasionally six eggs are deposited.

May 30, 1911, four nests were examined of which the first one held four slightly incubated eggs, another contained large young birds, in the third nest was a brood of very small birds, while the contents of the fourth proved to be two fresh eggs.

This species nests most frequently in the willows along canals and ditches, but eucalyptus and cottonwood trees are also often chosen. At least one pair of orioles are almost sure to locate for the summer about nearly every farm house, taking possession of any kind of tree that is to be found there. Some nests are built in upright forks of very small willows in swampy places, but in such cases they are always suspended from small twigs above and are not dependent for support upon the large branches of the fork, the latter, seemingly, being used for protection from wind and enemies. I have found such nests as low as eight feet from the ground, but the typical nest of *Icterus bullocki* is suspended from the extreme tip of a willow branch from twenty to thirty feet up, where an examination of the nest is an almost impossible task.

Nests in this section are composed largely of horse-hair, with string, if it is obtainable, woven into the framework. One or two specimens have been found that were made almost entirely of wild oat heads.

These horse-hair nests hanging to the leafless branches all through the following winter often prove a death trap to other birds, and the writer has frequently seen a linnet or other small bird hanging by the neck from an old oriole's nest. Last winter, after much throwing of sticks, my smaller brother and myself brought down such a nest from a height of about twenty-five feet and were not a little surprised to see that the bird, which was suspended by a horse-hair fastened securely around its neck, was none other than a Sierra Junco. I do not know how this terrestrial species could have met with such an accident unless it had sought shelter at night in the nest.

The small yellow butterfly that is found in such numbers in alfalfa fields at certain seasons seems to be especially attractive to the orioles, and countless dozens of them are devoured. I have seen this bird in the role of flycatcher at such times, flying from a fence wire and seizing a butterfly on the wing, a rather clumsy effort but serving the purpose.

It has been suggested that we cannot count the date of the arrival of this oriole in the spring from the time its note is first heard, unless the bird is actually seen, as the Western Mockingbird is said to imitate the notes in a most deceptive manner just before the orioles arrive. With that thought in mind the writer eagerly awaited the month of March this year, but failed to prove the correctness of that statement. A pair of Mockingbirds spent the entire winter in the trees along the street near his home and although they were heard singing, more or less, all through the winter, not a single note was heard that in any way resembled the call of an oriole, so I concluded that these particular birds either did not know or had forgotten the oriole's song. In view of this fact it seems reasonable to conclude that even had the notes that were heard on March twenty-fifth proven to have been produced by a Mockingbird it would, nevertheless, have been sufficient evidence of the arrival of at least one oriole.

BREWER BLACKBIRD. *Euphagus cyanocephalus* (Wagler).

Probably because the region about Fresno does not offer a sufficient amount of suitable food and the protection of trees in which to nest, the Brewer Blackbird has not been found breeding within the region treated in this work, although it is one of our most common winter visitants.

The arrival of these birds in the fall has been noted as follows: September 20, 1903; September 15, 1904; September 7, 1905; September 16, 1906. Thus this species may be confidently looked for after the first week in September; after this it gradually becomes more numerous, but the maximum abundance is seldom reached before the first of December. In the spring these blackbirds remain until nearly the first of May, my latest records being April 30, 1904, and April 29, 1911; but from the first week in March they became noticeably scarce.

Just where these black-coated hosts go during the breeding season is a matter that has not been fully determined. I have found a small colony breeding at Shaver Lake in the Sierras (CONDOR, XI, 1909, p. 83), but the great majority must resort to the oaks of the foothill regions. August 9, 1905, I noted quite a number of Brewer Blackbirds above Millerton on the San Joaquin River, some few miles north of Friant. There were also numerous old nests scattered along through the willows, and these nests were much like the usual structures built by this species.

From what I have been able to observe I think the Brewer Blackbird is a beneficial species, and should not be charged with the destructiveness of which the blackbirds of the genus *Agelaius* are accused. During the winter and early spring this species has a habit of following a plowman and feeding upon the grubs and worms that are exposed. If the workman walks along without appearing to notice their presence these birds will often follow at a distance of not over two or three feet, each one endeavoring to be the first to seize any unfortunate grub that comes to light; but should the plowman turn about or even hesitate for just a second the birds fall back with a questioning "k-chick."

Open ground, especially summer fallow, is preferred by these birds, and an acre or two of pasture land is their especial delight. Every ranch has a flock that spends the winter feeding about the corrals.

One spring vast numbers of rose beetles invaded the country about Clovis and after destroying the rose flowers they took to the vineyards, where they did considerable damage to the foliage by boring numerous holes through the leaves, causing them, eventually, to wither and drop off. Every day for nearly a week a great flock of Brewer Blackbirds hovered over a certain vineyard that I had an excellent opportunity to observe. Crawling over the branches or alighting on the topmost shoots, these black plumaged birds were conspicuous objects against the green of the tender new foliage. As a result of the efforts of the birds, the vineyard was, in a short time, almost entirely free from the beetles. Truly this was a valuable service well worth recording.

LINNET. *Carpodacus mexicanus frontalis* (Say).

After observing the habits of the friendly little Linnet, or House Finch, as this bird is often called, the writer early became convinced that the number of individuals of this species occurring in the Fresno district showed little or no

increase from year to year, notwithstanding the fact that conditions appeared to be favorable for the maintenance of a much larger number of these birds than were to be found at any one time. With seemingly an almost unlimited supply of food during the greater part of the year, and a long, warm summer, it was not an easy matter to determine why Linnets were not really abundant at all times. Among the possible causes the English Sparrow was considered but was soon freed from suspicion, as these imported pests are established at only a few widely separated points outside the towns.

It has been only during the past two or three years that anything like a satisfactory explanation has presented itself: I now attribute the failure of our Linnets to increase in numbers to the fact that there appears to be, each season, a large proportion of non-breeding birds represented among the Linnet population of the valley.

During early February each year for the past three seasons I have noted the appearance of from twenty to forty of these birds in a warehouse where raisins are stored, but to which an easy access is gained through a foot or more of coarse wire mesh, all around the building just beneath the eaves. I am positive that none of this flock nested anywhere about the building, and am convinced that there were no breeding birds represented. This belief is based not only on the fact that this flock remained until well along in June but also upon the examination of one or two specimens.

Although the flock each year was made up of about an equal number of males and females yet they were all, to the best of my knowledge, unmated. It must not be thought that the writer is endeavoring to convey the impression that Linnets are anything but abundant residents in all the region about Fresno wherever the original arid conditions have been modified, for, without a doubt, they are, in point of numbers and wide distribution, the most common of birds in this part of the state outside of the towns. There, of course, the English Sparrows hold undisputed sway.

It seems unnecessary to describe the habits of a bird of so wide a range, especially since there appear to be no noteworthy variations in this region. In ten years of observation I have only seen two Linnets that were unlike the usual specimens in coloration, one of these being a male noted on May 27, 1906, in which the usual red areas were a brilliant yellow throughout. The other was an albino of a rather streaked pattern but very noticeable among a flock of normally colored individuals.

A nest of this species with five almost fresh eggs, found March 31, 1908, is the earliest nesting record that I have from this district. April, May and June, all have their quota of nesting Linnets in about equal numbers. I have found sets of four eggs to predominate, but five is by no means an uncommon number.

#### WILLOW GOLDFINCH. *Astragalinus tristis salicamans* (Grinnell).

"Wild Canary" is the name by which this handsome little bird is most commonly known, and it is a matter for congratulation from the standpoint of a bird lover at least, that these cheery yellow-plumaged birds have noticeably increased in numbers during the past few years. The name "willow" seems to have been well chosen, as the favorite haunts of this species are along the canals

and ditches, or wherever else a sufficiently marshy area exists to support a growth of willow saplings.

These goldfinches appear to be distributed everywhere through the lowlands of Fresno County, wherever conditions are suitable for them, and when not found along streams they may often be seen in peach orchards and in trees around dwellings. Their subdued whistling call is often heard in early spring-time in the trees along the city streets, but it sounds more cheerful on some foggy winter afternoon as a mixed flock of linnets and goldfinches gleans again through some sunflower patch for the few seeds that may have been overlooked on a previous search.

Any time from the last week in April until the first of July a pair of Willow Goldfinches may begin the construction of a nest, which later will contain four or five eggs of the palest blue color. These nests are beautiful, compactly woven cups, made of light plant fibers, bark strips, and cotton, and fastened in the forks of a willow or peach tree at a height of from six to fifteen feet from the ground, as a rule. The plainly clad female presents quite a contrast to her bright-plumaged mate, but the most interesting color contrasts are to be found in the males just before the breeding season, when they are in the midst of the pre-nuptial moult.

GREEN-BACKED GOLDFINCH. *Astragalinus psaltria hesperophilus* Oberholser.

Apparently this species and the Willow Goldfinch require different environmental surroundings. While the latter has become much more numerous as a result of the settling up of the country, this bird, never especially numerous in this region, has responded much less favorably to cultivation, and has decreased in numbers, to some extent, during the past ten years.

When the country was given over largely to grain ranches, with occasional weed-grown, uncultivated areas here and there, this goldfinch found conditions much more to its liking and was more often to be met with. Wherever sunflower patches occur it is still to be found, and during the winter months it often associates with Linnets, going about in large flocks. Probably much the same sort of food is sought by each of these species.

LAWRENCE GOLDFINCH. *Astragalinus lawrencei* (Cassin).

Excepting the Cedar Waxwing, there is probably no bird more erratic in its occurrence than this species. The few individuals that I have observed have all been noted in the month of April, with the exception of a single bird seen near Clovis, June 16, 1907. On that date a single individual was seen in a patch of weeds, where it was associating with Linnets and other goldfinches. I had a close view of it as it hung head downward, deftly extracting seeds from a woolly weed.

April 29, 1911, I found one male and at least three females of this species in a weed grown corner of an oatfield on the river bank below Lane's Bridge. There were also a number of very highly plumaged Willow Goldfinches and a few Linnets feeding in the same place.

I have heard of but one instance of the Lawrence Goldfinch nesting in this region and that was furnished me by Mr. Chas E. Jenney who found a nest with four slightly incubated eggs on April 11, 1906. This structure, which was built

in an almond tree in his yard, did not differ greatly in appearance from nests of our other goldfinches, but the eggs were perfectly white in color, a feature that at once distinguishes them from the pale blue eggs of the two other species of *Astragalinus* occurring in Fresno County. The habits of this gray-plumaged and black-throated finch apparently do not differ greatly from those of other members of this genus.

ENGLISH SPARROW. *Passer domesticus* (Linnaeus).

Gladly would we ignore this invader from a foreign land, but the fact of its presence cannot be overlooked. It should be the cause of no little alarm, since these sparrows are becoming well established in the country, after having literally taken possession of the city. During the gloomy winter days the little flocks that feed so confidently about our yards in town often endear themselves to us, but the following spring, when we look in vain for the native birds that should nest with us, our opinion of the English Sparrow is frequently much altered. Only the Mockingbird seems to be able to maintain his place within the city, while the linnet, goldfinches, and orioles have decreased in numbers as breeding birds. I have yet to learn of anything commendable in regard to the English Sparrow, while its habit of crowding out our own feathered friends is sufficient to condemn it.

WESTERN VESPER SPARROW. *Poocetes gramineus confinis* Baird.

The Vesper Sparrow is one of the several varieties of small, inconspicuous, brown sparrows that remain throughout the winter. The earliest date upon which I have observed this species in the fall was September 12 (1903), and arrivals should be confidently looked for by the twentieth of that month ordinarily. They have been known to remain as late as April 7 (1911), but as a rule nearly all have disappeared by the last day of March.

Like most of the ground-feeding sparrows, this bird must be highly beneficial as it eats quantities of weed seeds of various kinds.

Often, in March, I have observed one of these sparrows perched on a clod and pouring forth its pleasing song, or engaging in short animated flights, the white outer tail feathers serving to identify the species at some distance. Their song resembles the vocal efforts of a Western Lark Sparrow, perhaps, more than anything else, yet it lacks the rich fullness of the song of the latter, and seems to have less of finished quality. Weedy, waste fields and pastures are this bird's favorite haunts, but it is not strictly terrestrial, and is often seen upon a low bush or fruit tree, if one is afforded near its feeding ground.

This part of the state is probably visited by both the western subspecies of the Vesper Sparrow, *confinis* and *affinis*, but the Oregon Vesper Sparrow seems not to have been detected here as yet.

WESTERN SAVANNAH SPARROW. *Passerculus sandwichensis alaudinus* Bonaparte.

As one tramps around through tall dry grass along ditches and fences, through alfalfa fields and along the borders of vineyards, this little sparrow often flushes from almost under the very feet of the intruder; and we have just a glimpse of the plain, brownish colored little bird as it rapidly zig-zags

along, just skimming above the ground, and after a short flight pitching into the first bunch of weeds that offers concealment.

Sometimes a startled, squeaky note is heard as the bird takes flight, the only attempt this sparrow ever makes to voice its feelings during its winter sojourn with us. Except when startled into these sudden flights it spends all its time on the ground, and nearly always in grass where it cannot be seen; so that one might remain unaware of its presence for years unless an especial search was made for it.

The Western Savannah Sparrow is just one of many plain little sparrows and has nothing about its appearance or habits to render it noticeable, yet it is withal, a most interesting bird and well worth observing. No doubt a careful study of it would prove immensely interesting and worth while.

I have seen this species as early as September 24 (1905), and Mr. Grinnell has recorded it from an adjoining county as late as May 4 (CONDOR, XIII, 1911, p. 110).

WESTERN GRASSHOPPER SPARROW. *Ammodramus savannarum bimaculatus* (Swainson).

Western Grasshopper Sparrows are probably not as rare in the winter as might be supposed, but their habits render them inconspicuous and they are easily overlooked. Old, weedy fields, weed-grown vineyards, and berry patches are their favorite resorts, where they are found with Western Savannah and Western Vesper sparrows. I have found it very difficult to identify with certainty some of the smaller sparrows in the field, or to distinguish between one or two of the several terrestrial species as the birds skulk through the weeds or dart away from under the feet of a pedestrian, only to settle again a few yards away after an erratic and apparently aimless flight. In the case of the present species, however, I have observed a tendency to run away rather than to fly, and in fact it requires some fast walking to get them to take wing.

February 18, 1911, I secured a male of this species near Clovis. The locality was a weed-grown young vineyard from which the brush had been pruned and allowed to lie where it fell.

I have suspected that possibly, on rare occasions, the Western Grasshopper Sparrow might be found breeding in this vicinity, and based this belief on the following incidents. One year, in late August, I had occasion to cross a large summer-fallow field, and when about at the middle came upon the bed of a slough that was then dry but had carried quite a volume of water earlier in the season. For twenty yards or more on either side was a thick growth of tall sunflowers and cockleburrs, and while passing through these I happened to notice a small nest neatly concealed among the weeds at the base of a sunflower stalk. This nest was undoubtedly the work of some small sparrow but was unlike any with which I am familiar, being much too small for a nest of our most common ground-nesting member of this family. In fact, it answered very well to the descriptions of nests of the Grasshopper Sparrow, but as there were no birds present at the time I had no means of determining, for a certainty, what species had constructed it.

On the eighth of June, 1912, the writer enjoyed a day in the field with Mr.

J. Eugene Law. We explored some overflowed land about four miles east of White's Bridge where we encountered a scattered colony of Grasshopper Sparrows. They were frequenting ground grown up with clumps of a species of bunch grass, and bordered by quite an extensive area supporting some kind of "sage-brush." During the time we were in that vicinity we flushed several of the birds and also heard their insect-like song. The late date and the fact that the birds appeared quite at home seemed to indicate a breeding colony of at least three or four pairs, but we failed to find any nests.

WESTERN LARK SPARROW. *Chondestes grammacus strigatus* (Swainson).

In this age when the bird student marks with regret the gradual but certain decrease in the numbers of so many of our birds, as a result of the rapid settling up of the few remaining tracts of uncultivated land, it is certainly a pleasure to note that here we have a species that has responded favorably to a changed environment, and seems to be actually on the increase.

Formerly, when our vast grain fields extended for miles in all directions, and the stock ranges had not felt the influence of the plow, then, amid far more arid surroundings than at the present time, we found Western Lark Sparrows living in company with Ground Owls and horned toads; and thriving on grasshoppers and such wild grain and seeds as nature provided.

Since the last few years have wrought such a transformation, this same species has accepted the change without any apparent hardship; and the Lark Sparrows now lead happy and useful lives amid the orchards and vineyards that have sprung up everywhere over the valley like a crop of mushrooms that often appear in a single night. Although a resident, and common throughout the year, this species is more abundant during the summer than during the winter months. The Lark Sparrow population also varies somewhat from year to year.

Aside from the inimitable Western Mockingbird, I know of no other bird that sings so often at night. On more than one occasion I have refrained from sleep in order to listen to the notes that ring out with such wonderful sweetness when heard in the still night hours when all other bird voices are hushed. The peculiar "burring" note so characteristic of this species serves to distinguish the Lark Sparrow's vocal efforts from the song of any other of our birds. While the same note appears in the songs of several of the other finches, yet in none of these is it present in such numbers; nor do the other birds sing so persistently as this friendly "fan-tail," for by that name many a schoolboy knows the Western Lark Sparrow.

Excepting the Linnet, I know of no bird that makes use of a greater variety of nesting sites, and no doubt the species owes its abundance at the present time, in a measure, to the diversity of positions in which it conceals its home. Nests have been found on almost bare ground, in alfalfa fields, and among weeds, the amount of concealment varying from almost none at all to so much that the nests could be considered artfully hidden. Other nests have been noted in bushes and grape vines, sometimes just a few inches above the ground and from that height up to six feet or more; still other pairs choose an orchard or shade tree and place their rather bulky structure as high sometimes as ten feet, but more often not more than six feet up.

I have observed nests built up to a height of four or five inches and placed on hard dry ground, and have seen others that were sunken in an excavation so deep that the female bird on the nest was hardly visible. Probably seven out of every ten in this part of the valley are well hidden on the ground, at the base of a vine in a vineyard.

The nests are usually well made, there being a substantial outer structure of dry weed stems, grass and rootlets, lined, almost without exception, with long black horsehairs.

In my experience the Lark Sparrows are quick to resent any molestation of their home, not infrequently deserting, even when the nest is not touched; but the following incident will show that such is not always the case. Late in April, 1907, a nest was found with one fresh egg. Two days later I visited the place and could not find either of the owners, nor could I account for one of the eggs being on the ground fully eight inches from the nest while the other two were just outside and resting on the edge of the nest material. The horsehair lining was undisturbed so I replaced the three eggs. The following day one of the birds was occupying the nest again, and had added another egg to the set.

In one case that came under my observation the eggs hatched on May 4, and the last young bird left the nest on the 15th. It is interesting to note that the elongated type of eggs that are occasionally met with, resemble in size, shape and markings, certain specimens produced by the Bullock Oriole, although the usually almost spherical eggs of the Western Lark Sparrow can be distinguished at a glance from those of any other bird.

The following table will show the nesting dates recorded by the author in the past ten years:

Date		Contents of Nest		Incubation
May	16 1902	3	eggs	well begun
April	30 1903	4	"	somewhat advanced
May	12 "	4	"	fresh
"	12 "	5	"	slight
"	5 1904	3	"	well begun
"	3 1905	3	"	commenced
"	8 "	4	"	begun
June	10 "	2	"	advanced
July	14 "	3	young	5 or 6 days
April	25 1906	5	eggs	slight
"	28 "	4	"	fresh
"	29 "	4	"	fresh
May	3 "	4	"	advanced
"	4 "	4	"	begun
"	8 "	4	"	advanced
"	11 "	4	"	begun
"	11 "	4	"	begun
"	14 "	4	"	advanced
June	9 "	3	"	begun
April	26 1907	4	"	very slight
"	28 "	4	"	begun

	Date		Contents of Nest	Incubation
"	28	"	4 "	fresh
May	2	"	4 "	well along
"	2	"	4 "	slight
"	7	"	4 "	begun
"	8	"	4 "	well along
"	9	"	3 "	well begun
"	9	"	4 "	well begun
June	22	"	4 "	advanced
April	28	1908	3 "	well along
"	30	"	3 "	well begun
May	4	"	4 "	advanced
"	6	"	3 "	slight
"	10	"	3 "	advanced
April	29	1910	4 "	well begun
May	8	"	4 "	well begun
"	15	"	4 "	advanced
June	12	"	4 "	about half
April	30	1911	5 "	begun

INTERMEDIATE SPARROW. *Zonotrichia leucophrys gambeli* (Nuttall).

Without the slightest doubt this form of the White-crowned Sparrow is the commonest member of the sparrow family occurring in the valley during the winter months. Every brush pile, hedge row, orchard or weed grown fence corner has its flock varying in size from a half dozen to literally hundreds of birds according to the amount of protecting cover near at hand.

The startled squeak of one of these sparrows as it rises from the grass is far from musical, but the subdued caroling of a half hundred birds in concert, as they dry their plumage on a brush pile, after a shower, is one of the most pleasing efforts that could greet the ear of a bird student.

The Intermediate Sparrow, by which name this species is most commonly known though it is also called Gambel Sparrow, usually arrives in the vicinity of Fresno during the latter part of September. In 1905 the first birds were seen on the 17th of that month; in 1911 they appeared on the 24th. The last few days in April, as a rule, witness the departure of the great majority of these sparrows, but occasionally one or two individuals remain for several days after that date. Although the late April weather in 1904 was quite warm, it did not hasten the departure of these sparrows and they were still very numerous on May 2. The weeds along fences near Lane's Bridge had a full quota of sparrows April 9, 1911, but a subsequent visit, on the 29th, revealed only a few scattered birds.

It would probably not be too high an estimate to state that these sparrows comprise fifty percent of the food of all the Sharp-shinned Hawks that frequent the lowlands in midwinter. This fact alone is sufficient grounds for condemning that little tyrant, for it seems that an enormous quantity of weed seeds must be consumed each day by this army of ground feeding sparrows.

Many a gloomy day has been enlivened for the author by the presence of a flock of these white-crowned little creatures about the yard or in the garden,

for they always seem more friendly during the most foggy weather when other birds are all too inconspicuous.

GOLDEN-CROWNED SPARROW. *Zonotrichia coronata* (Pallas).

How frequently, in the study of ornithology, does the unexpected happen! On the fifteenth of last March the writer greatly enjoyed a brief visit from Mr. Joseph Grinnell, of Berkeley, and in the forenoon we drove out north of Fresno five or six miles. I had just informed him that the Golden-crowned Sparrow was one of the rarest of our winter visitants, and that only two days before I had noted my first bird in ten years. Hardly had I finished speaking when a half dozen or more of these birds arose from some weeds near the roadside and flew to a row of willows along a ditch. This, to me, very unexpected appearance, must have caused my companion to doubt the thoroughness and accuracy of my previous observations!

March 13, 1911, I saw two Golden-crowns on the lawn in front of my home. They were noted before sunrise in company with several migrating Western Chipping Sparrows. Previous to that time I had watched for them during ten winters but had never detected even a single individual, although Miss Winifred Wear tells me that she has a number of records from November 10 (1910) until April 26 (1908). Until more of these birds have been observed the writer cannot record the Golden-crowned Sparrow as anything but a rare winter visitant.

WESTERN CHIPPING SPARROW. *Spizella passerina arizonae* Coues.

Although an abundant spring migrant through the valley, this little sparrow is one of the least common of our summer visitants. Each day during the last half of March a goodly number of these red-capped little fellows appear, usually as soon as it is daylight, and remain for several hours; but by noon all have disappeared, and until the following morning brings another company, an observer would not suspect the presence of this species anywhere in this part of the valley. During these brief forenoon calls the birds usually feed about lawns in the city, or trill musically from the shade trees along the street. March 28, 1911, I counted six of these sparrows on the lawn in front of my home and there were a dozen more in the yard. The first arrivals were noted on March 13 that year.

Although I have several times seen Chipping Sparrows at a time when the species should be nesting, yet only one instance of actual breeding has come within my notice, on June 8, 1912, when a nest with four half-incubated eggs was found near Clovis. June 23, 1905, a single Western Chipping Sparrow was seen in company with several Western Lark Sparrows, but there was nothing to indicate that it might be a breeding bird.

All through the month of June, 1911, from one to five or six of these sparrows were to be seen in the Fresno County court house park where they hopped along the grass chipping contentedly. They appeared thoroughly at home, yet I doubt if they nested in the park.

As this bird lives, to a great extent, on food picked up from the ground, it can do no harm during its short stay in the spring. It might be easily overlooked entirely by one not familiar with its habits and song.

BREWER SPARROW. *Spizella breweri* Cassin.

Brewer Sparrows, although almost unknown in the region about Fresno up

to five or six years ago, have seemingly become well established throughout the vineyards northeast of Fresno, and elsewhere also. The presence of this bird was first suspected in early May, 1906, when a small, long-tailed sparrow was frequently seen and heard in a vineyard near Clovis, but not until June 5 was the identity satisfactorily established. On that date a nest with three eggs was found. An account of the habits of this bird was published by the writer in *THE CONDOR*, XII, 1910, p. 193.

At the present time the Brewer Sparrows are much more generally distributed, and may be found in nearly all the vineyards near the city. They were found near Malaga the first week in July, 1911, and near Tarpey during May. In a certain small willow-grown swampy area near Clovis, on September 4, I found quite a flock of small sparrows in a thick foliated tree. They were in full song and their vocal efforts were not at all unlike a chorus of Intermediate Sparrows, but lacked some of the rich quality of the latter. Individuals were constantly appearing on the outer branches, singing a few notes and then diving down into the heavy foliage below, when others took their places. I was not a little surprised to find that these were the little mouse-like *Spizella breweri*, as I had always been led to believe that this species frequented only the sage brush of dry hillsides, and they seemed out of place in a swamp where Bermuda grass and willows suggested song sparrows more than anything else.

Although the ornithological books do not give this bird as a resident as far north as Fresno, yet it certainly does remain with us in limited numbers, as was evidenced by the author finding several of them in a weedy old berry patch near Clovis on December 26, 1910.

As these little birds do no damage whatever, they should be encouraged to nest in vineyards, as they must glean many an insect from the leaves during the long summer days.

#### SIERRA JUNCO. *Junco oreganus thurberi* Anthony.

Surely everyone is familiar with the little black-headed snowbirds that seem to especially rejoice in the coldest, most stormy weather, this preference having given rise to their common name. Among those who live in the foothills the idea prevails that the assembling of a flock of these birds certainly presages a snow-storm.

Juncos nest abundantly in the Sierras in Fresno County, but appear in the valley only during the winter months. My earliest record for their appearance in the fall is October 24, 1905; but I feel certain that they had appeared earlier than that. In the spring they remain until the middle of March and sometimes later. April 11, 1911, three or four juncos were noted in some willows near Clovis. As this species feeds like the sparrows on the ground where, no doubt, it destroys numberless weed seeds, it should be encouraged to frequent vineyards and pasture lands.

The writer has frequently observed an entirely different junco, probably *Junco hyemalis hyemalis*, the eastern Slate-colored Junco, but until a specimen has been preserved for identification this point cannot be determined. These individuals are always more shy than the birds with which they associate, and upon the slightest provocation take to the nearest brush or trees. They appear after

severe storms as lone individuals in flocks of the Sierra Junco, and soon disappear again.

CALIFORNIA SAGE SPARROW. *Amphispiza nevadensis canescens* Grinnell.

The occurrence of this bird in Fresno County was brought to my notice by my friend Joseph Sloanaker who found it to be the most common winter sparrow in the vicinity of Raisin, with the possible exception of the Intermediate White-crowned Sparrow.

The plains in that part of the county are covered with clumps of bushes characteristic of the semi-arid regions, and apparently exactly suited to this desert-loving bird.

I have no information as to whether or not this sparrow, as recorded from Raisin, is a breeding species, but conditions there seem favorable; future field work will have to determine this point. The first record of the occurrence of the California Sage Sparrow in this region appeared in *THE CONDOR*, XIII, 1911, p. 76.

HEERMANN SONG SPARROW. *Melospiza melodia heermanni* Baird.

The presence of water is such an essential to the welfare of this sparrow that the bird's range may easily be determined by learning where water is to be found. As has been pointed out by Mr. Grinnell (*CONDOR*, XIII, 1911, p. 110), the irrigation system that is at present extended to so many points in the valley, has been the means of giving this bird a much wider range than it had in former years. Reasoning from the theory that any given locality is tenanted by as many birds as it will support, we may safely assume that there are at present at least three times as many song sparrows in Fresno County as there were in 1900.

Definite breeding stations within the Fresno district may be mentioned as follows: Fresno, Clovis, Letcher, Lane's Bridge, Malaga, and Wheatville. Doubtless many other points could be added to this list with a little field work.

This is a bird that is easily overlooked, as it prefers the seclusion of rank grass, tules, and willow saplings. It sometimes comes into view, however, and pours forth its monotonous, yet pleasing, song from a swaying tule stalk from which the singer can hurriedly dive to a place of concealment at the slightest alarm. The vocal efforts of this bird always suggest the cool, moist, willow-grown areas where the blackbird's "kong-ker-ee" and the whistling notes of the Western Yellowthroat make a fit accompaniment. A sort of sentiment attaches to the song sparrow, having a tendency to cause it to find favor with nearly everybody; and since it can be accused of taking neither fruit nor grain it is worthy of our protection at all times. Doubtless untold hundreds of insects that would breed in swampy places and spread out over adjoining fields and vineyards, are destroyed by this sparrow.

As this species is resident wherever it occurs, it is an early breeder. The birds begin nesting early in April and continue from that time until the last of June, my earliest and latest dates being April 8 (1911), for four fresh eggs, and June 27 (1901), for a like number in the same condition. Probably two broods are raised under normal conditions. Heermann Song Sparrows are not at all particular when it comes time to select a site for a nest, the principal requisite being a tuft of grass or bunch of leaves that will conceal the nest and at the same

time permit its owner to remain near water. I have found nests in thick bunches of grass not three inches above the water, and at other times ten feet up in willow trees, but the typical nests are built among willow shoots along smaller canals, where they average from one to four feet above the ground. Dried willow leaves enter largely into the composition of these frail nests; the lining is almost invariably of dried, round, grass stems. Four greenish, brown-spotted eggs are laid unless it be late in the season, when sets of three are not infrequently seen.

FORBUSH SPARROW. *Melospiza lincolni striata* Brewster.

These interesting little sparrows have been detected at only two points in this region. In THE CONDOR (XIII, 1911, p. 76) I recorded the taking of a specimen near Clovis on December 26, 1910; and Mr. Grinnell has recorded them in the same publication (CONDOR, XIII, 1911, p. 111) as occurring near Lane's Bridge April 9 and 10, 1911. At the latter place I had some slight chance to observe them but they proved very shy. They were frequenting a marshy place at the base of a hill, the lower slope of which was covered with a thick growth of hoarhound bushes. At the slightest disturbance these birds and a few Heermann Song Sparrows that shared the marsh with them, would betake themselves to this weed patch, and dive in at full speed. Sometimes when I had marked the exact spot where one of these birds disappeared, I would attempt to flush it by hurriedly tramping through the brush, guided by an occasional glimpse of the sparrow as he sneaked along ahead of me; but generally the birds could outdistance me, and it required no little exertion on my part to get them to take wing again. When we retreated some distance and quiet reigned again, the little sparrows could be seen dropping in short quick flights down into the swamp.

If the form *lincolni* occurs in this region it has not yet been detected, so far as I am aware.

SLATE-COLORED FOX SPARROW. *Passerella iliaca schistacea* Baird.

Slate-colored Sparrows appear to be of regular occurrence in very limited numbers during the early winter, especially from late October until the last of December, when they disappear or are rendered inconspicuous by the appearance of not a few of the larger form, *insularis*. Until more evidence is brought to light I do not think we would be warranted in rating this sparrow as a winter resident, and I am inclined to believe that the birds merely tarry here for a month or more on their way to their winter home. The difficulty of identifying with certainty, in the field, the two or three forms of fox sparrows that occur in Fresno County during the winter, has caused me to hesitate to give any definite dates for the arrival or departure of these birds. No doubt a little more systematic work would bring to light a number of interesting facts regarding their distribution in this part of the valley.

November 20, 1910, Mr. Joseph Sloanaker and myself observed two small fox sparrows in Roeding Park, and watched them for some time as they scratched among the leaves within ten or fifteen feet of where we were concealed. Four days later I saw another of what I felt certain was the same species, in a big brush pile at the edge of a weedy pasture near Clovis. This last bird was added

to my collection and was identified as *schistacca* by Mr. Joseph Grinnell, of the University of California. This was recorded in THE CONDOR, XIII, 1911, p. 76.

**KADIAK FOX SPARROW. *Passerella iliaca insularis* Ridgway.**

This is the largest of our sparrows, and in the field appears at times but little smaller than the California Towhee. It comes to us a little later than the host of sparrows that winter in the San Joaquin Valley, and does not reach the high tide of its abundance until the month of December. Even then it is at no time abundant, and soon begins to decrease in numbers. Fox sparrows of all kinds are rare after the first of the year. I have a specimen of this fine bird, taken near Clovis, December 26, 1910.

A fox sparrow collected by Joseph Sloanaker near Raisin on October 13, 1910, was identified by Mr. Grinnell as "*meruloides*," a form not recognized, as yet, by the American Ornithologists Union.

There is no more interesting group of birds than these large, richly colored sparrows, and the writer hopes to become more intimately acquainted with them.

**CALIFORNIA BROWN TOWHEE. *Pipilo crissalis crissalis* (Vigors).\***

Brown Towhees occur in varying numbers over much of the higher, more dry, portions of the region about Fresno, being very scarce or entirely wanting in the swampy and treeless areas. Brush and various low-growing shrubs, with occasional trees, form the ideal habitat of this species; so it is not surprising to find its center of abundance along the larger canals and at the outlets of the foothill creeks along the eastern part of this district.

Kearney Park, with its wonderful variety of trees and bushes, forms an ideal retreat, where the towhees are never molested, and where the species is represented in greater numbers than in all other parts of this district combined. Gardens and orchards are favorite resorts, but vineyards are shunned along with all the more open tracts.

The bulky horse-hair-lined nests are usually constructed in thick bushes or trees, from three to eight feet above the ground, a favorite site being a bunch of small second-growth shoots at the top of a willow stump.

The usual complement of eggs is four, but I have found several sets of but three, and in at least three different instances the birds began the duties of incubation with just two eggs to their credit. The sets of two were in each case the first ones laid, so far as I could determine. May and June are the nesting months, my earliest record being May 1 (1906) for considerably incubated eggs. A set well along in incubation was found June 30 of the same year, while all other dates have fallen between these two extremes.

The towhees are big, good-natured fellows, in no way injurious to man's interests, while they, like other sparrows, render valuable service by gleaning from the ground much that might prove harmful to agriculturists.

**SAN DIEGO TOWHEE. *Pipilo maculatus megalonyx* Baird.**

The ornithologist is often hard pressed by his friends, especially by those who do not make any claim to knowledge along this line; to find satisfactory explanations for some of the seeming inconsistencies that occur among the common

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\*This name is used in accordance with the A. O. U. *Check-List*. Possibly our towhee may be referable to the form *senicula* (see Grinnell, CONDOR, XIV, 1912, p. 199).

names of birds as set forth in the A. O. U. *Check-List*. After we have spent years in teaching a none-too-willing subject that a certain shy, gay-plumaged bird is a "Spurred Towhee", it is disheartening to have to inform our pupil that this same bird has suddenly discarded its well-earned name and must now be called "San Diego Towhee." Any explanation that we offer is sure to be met with some such response as "Well, what the deuce to you want to call it a San Diego Towhee for, anyway, when it is just as common in Fresno as it is down there?" Now, it must not be understood that the writer would attempt to criticise the Committee that labored so earnestly to produce the new *Check-List*, but it does here seem justifiable to retain "Spurred Towhee" rather than to adopt the name "San Diego Towhee" proposed by them.

Nowhere in the immediate vicinity of Fresno has this handsome species been found breeding, but Mr. Chas. E. Jenney has found one or two nests along the San Joaquin River, and a pair of birds were located by the author in a thick growth of nettles and willow brush in the river bottom near Lane's Bridge, April 29, 1911.

Few of these towhees are to be found at our low elevation during the nesting season, but in October they begin to appear, and gradually become more common from that time on. Through all the winter months they are present in greater numbers than their shy, retiring habits would seem to indicate. Their favorite resorts are the brush piles and thickets, at the edges of vineyards and along ditches, where there is always some protecting heap of brush. At the least disturbance the birds dive into these brush heaps, from which their single harsh note is sometimes heard, although the elusive owner of that catlike voice may not permit us even a glimpse of his handsome black, white and orange coat.

If the spring is late the Spurred Towhees remain until several of April's best days have gone, especially if there is a cold, rainy period during the preceding month. When, as frequently happens, March brings along a succession of bright, warm, cloudless days, the desire to return again to their summer homes in the mountains becomes too strong; and before we are aware of the fact the Spurred Towhee is no longer present in the valley.

BLACK-HEADED GROSBEAK. *Zamelodia melanocephala* (Swainson).

Black-headed Grosbeaks occur sparingly in the spring along some of the larger ditches, among the willows in the river bottoms, and wherever in the valley a half apology for timber is to be found.

Nearly all of the few that I have observed were males in most brilliant plumage; and I have generally been attracted by the loud rich song, which always brings to memory my boyhood days, spent so pleasantly in the Tehachapi Mountains.

Grosbeaks—a single male in each case—have been noted as follows: in the willow swamp near Sunnyside, April 22, 1906; in a willow thicket on the Gould ditch near Tarpey, June 12, 1910; and near Lane's Bridge, on the San Joaquin River, April 29, 1911. I am informed on good authority that they occasionally nest at the last mentioned place.

The spring of 1912 was remarkable for the unusual number of grosbeaks that appeared in all parts of the valley. Late in April and during the first half

of May numerous pairs were observed in many of the willow clumps and along the ditches.

The splendid song of these migrants was much in evidence although the birds themselves were rather shy. So far as could be observed all of these handsome vocalists passed on to a more suitable summer home, none remaining to nest with us.

WESTERN BLUE GROSBEAK. *Guiraca caerulea lazula* (Lesson).\*

While tramping around in late spring among the rank weeds and grass along the ditches or at the edge of tule ponds, a bird-lover in the San Joaquin Valley is often attracted by a sudden explosive "spink" from a large-billed, blue-coated bird, and very often this call is answered in a more subdued "pink" by a brown-colored bird, otherwise quite similar in appearance to her mate. If the date be the 18th to 20th of April it is safe to assume that a newly arrived pair of Western Blue Grosbeaks have been encountered, for these birds are among the last of our summer visitants to arrive each spring in the vicinity of Fresno.

The presence of water close at hand seems to be one of the chief requirements of this species during the nesting period. Quite as noticeable is their complete disregard for it after family cares are over, when the grosbeaks seek the driest grain fields and roadside weed patches, where they may often be seen clinging to swaying wild oats. This plant, together with the cultivated variety, forms one of their favorite foods during the month that they remain in this vicinity after their nesting season terminates, in late June or the first week in July.

Among the last birds to arrive in the spring, our Grosbeaks are probably the first to depart, and the southward migration begins early in August. Beginning before sunrise on the morning of August 8, 1911, and for the next two days at least, a migration wave of these birds was observed at Fresno. On the morning mentioned I was attracted by a subdued finch-like song hastily executed, as the singer perched just for a moment on a telephone wire that ran through the outer extremities of one of the branches of a young eucalyptus tree growing in front of my home. Hardly had the song been finished when the bird flew away toward the south, to be followed in a very few minutes by another that went through precisely the same maneuvers, even to perching on almost the exact section of wire that the other had occupied. So far as my observation could determine, the individuals seen on those three mornings were all males. Each one was travelling alone, but was probably keeping within calling distance of another. Although only about a dozen grosbeaks were seen on the three mornings, yet I had reason to believe that many others were passing over the city at the same time.

Along many of the canals and ditches in the valley grow patches of a plant, the name of which I do not recall, but which greatly resembles in appearance and manner of growth the Chrysanthemum. It would probably be no exaggeration to state that seven of every ten grosbeak nests are built in the clumps of this plant, being fastened to two or three upright shoots in much the same manner that a blackbird attaches its basket-like nest to a bunch of tules.

When built in such situations the nests vary from six inches to five feet

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\**Guiraca caerulea salicarius* of Grinnell. See Proceedings Biological Society of Washington, xxiv, 1911, p. 163.

above the ground, and while ridiculously easy to find when one is familiar with the birds' habits, it is doubtful if anything but mere accidental discovery would ever reveal the majority of nests to the chance prowler. Since only one pair of grosbeaks may occupy any clump of these plants, it follows, when there are not enough such sites to go around, that numerous pairs are often compelled to seek other places in which to construct their homes. A second choice becoming necessary, nests are not infrequently built in the thick bunches of small willow saplings where, again, they bear resemblance to the work of the Bi-colored Blackbird.

It sometimes happens, too, that a pair of grosbeaks will take up their residence in an orchard, when they will be found nesting in a peach tree at a height of from eight to twelve feet. The average height from the ground of the many nests observed by the writer has been about four feet; but at times a more elevated situation is chosen. Such an instance was noted on May 30, 1911. A stick was thrown into the branches of a large willow tree, where a bird of some sort could be seen occupying a nest fully twenty feet from the ground, and at the end of a small horizontal branch the tip of which took an abrupt vertical turn and hung out over a ditch full of water. With the characteristic "pink" a female Blue Grosbeak left her nest. Early in the summer of 1905 a pair of these birds built a nest about fifteen feet up, on the end of a horizontal branch of a poplar tree in a yard; so it will be seen that the bird's habits are not uniformly as terrestrial as might be supposed.

Nests of the Western Blue Grosbeak are well-made, light baskets of dry grass, weed stems and rootlets, lined with black horse-hairs if such are obtainable. I have yet to find a nest that did not have either a piece of paper or a dry, paper-like leaf woven into the framework somewhere. Sets of three and four eggs are found in about equal numbers, the time ranging from May 18 (1906) to June 23 (1901). One instance of later nesting came to my notice in 1905, when young just out of the nest were seen July 15.

The song of the male Western Blue Grosbeak greatly resembles that of a Linnet, but is not quite so loud nor prolonged.

#### LAZULI BUNTING. *Passerina amoena* (Say).

Throughout the valley this beautiful little finch is of regular occurrence, though in very limited numbers, being far outnumbered by its near relative, the Western Blue Grosbeak; but along the foothills the reverse order of abundance prevails, and the little blue bunting with the white wing-bars is most often seen.

Berry patches and gardens are the favorite haunts of the Lazuli Bunting during the few months that it is with us. I observed them in greater numbers near Riverdale, July 13, 1911, than I have ever seen them elsewhere in the valley. At least one pair has been known to nest for several years in a garden in the city, and each year from late April until June one or two individuals have been noted near Clovis.

May 22, 1906, a nest was found among a tangle of weeds and willow shoots along the Gould ditch near Tarpey. This nest was saddled on a small dead branch, and supported by two or three upright green stems, a situation not unlike that often chosen by the Blue Grosbeak. The composition and appearance of the

nest was more like the work of a Heermann Song Sparrow than the usual type of grosbeak nest, being composed of strips of grass blades and stems, lined with finer grass stems and a few horse-hairs. Incubation had begun, in the three pale blue eggs that composed the set.

**WESTERN Tanager. *Piranga ludoviciana* (Wilson).**

This is one of the species that occur commonly in the higher mountains but are seen in the valley only as stragglers. Miss Winifred Wear records a Tanager seen within the city on May 8, 1907, and the author observed a beautiful male near the Scandinavian Colony schoolhouse the first day of June, 1908. This bird flew into the lower branches of a mulberry tree at the roadside, and I drove past only a few feet away. From all appearances the bird was perfectly healthy; but I suspect that possibly it had been injured earlier in the season, or it would hardly have remained in the heat of the valley at the time of the nesting season of this species in the high Sierras.

The present season (1912) seemed to bring quite a migration wave of Tanagers. On May 12 fully a dozen were seen in a half hour's walk along the Gould ditch near Tarpey. All appeared to be males in the brightest plumage and were quite fearless. One fine fellow, panting with the heat, perched not ten feet away while I slowly walked past. Later, on the twentieth day of the same month, another was seen flying from a bush at the roadside near Easton, south of Fresno.

**WESTERN MARTIN. *Progne subis hesperia* Brewster.**

The Western Martin has been observed on only two occasions, and both of the birds were probably migrants. August 22, 1904, just at dusk in the evening a Martin flew over in company with several Barn Swallows traveling toward the south. The long wings and wonderfully rapid flight gave a strange batlike appearance to this bird, which soon disappeared into the fast approaching night. Some days previous to this another individual was seen under much the same conditions, but none have been observed since that time.

Miss Winifred Wear tells of having noticed this species near Riverview, April 27, 1907.

**CLIFF SWALLOW. *Petrochelidon lunifrons lunifrons* (Say).**

The first arrivals of this species in the spring precede the Barn Swallows by two or three days, the two species not at any time traveling in company so far as I have observed, although it is not an uncommon sight to see Cliff Swallows and the handsome Violet-greens traveling together. As recorded in *THE CONDOR* (XIII, 1911, p. 168), the earliest records I have in the spring are March 14, 1903 and 1904, but the species seldom becomes numerous until the last week of that month. In late September large flocks may be seen journeying toward their winter home south of the United States. September 23, 1904, a warm, cloudy day, was remarkable for the great number of these birds that were seen in migration.

As the bluffs along the river bear but slight resemblance to cliffs they do not offer much attraction in the way of nesting sites, but nevertheless a small colony of these swallows sometimes nests in comparative safety just above Lane's Bridge on the Madera County side. Aside from the river bluffs there is not the slightest semblance of a cliff anywhere near Fresno, and as a consequence the Cliff Swal-

lows nest in barns and sheds, choosing those that are near some ditch or creek where mud may be obtained.

Considerable variation in nesting dates has been observed, as I have found young birds in nests examined April 29 (1910), and fresh eggs on various dates in June, up to the 27th. Four eggs, as a rule, constitute the sets in this vicinity, five being exceptional in my experience.

BARN SWALLOW. *Hirundo erythrogastra* Boddaert.

All aspiring ornithologists in the Fresno district take heart! If we cannot regale our readers with accounts of Bohemian Waxwings, Western Evening Grosbeaks, and other rarities, we can at least claim one world's record! On the 15th day of March, 1911, Mr. Joseph Grinnell and the author, while driving along the road north of Fresno, observed a pair of Barn Swallows quietly preening their wings, on a telephone wire over a bridge that crossed a large canal. Mr. Grinnell has recorded this occurrence (CONDOR, XIII, 1911, III) as probably the earliest date on record for the appearance of this swallow anywhere in California. At the time, the fact of Barn Swallows being present by middle March did not impress me as being anything out of the ordinary, for I have always confidently looked for the species by March 20 each year. In the fall the great majority of these swallows departs during September, and excepting for a lone bird noted October 1, 1905, I have no records later than the last week in September.

One or two of my bird-loving friends from other parts of the state have expressed surprise when I mentioned the nesting of Barn Swallows in Fresno County. Their surprise would be even greater if they could see the hundreds of birds that literally swarm about some of the larger bridges crossing the sloughs southwest of Fresno in the Wheatville region.

The writer cannot call to mind even a single nest of this species that was built in a situation other than under a bridge. Eastward from Fresno, where bridges are fewer in number and usually of a smaller size, the number of nesting swallows decreases correspondingly, but even the smallest span is sure to harbor at least one or two pairs. The one essential, so far as I can learn, is the presence of running water beneath the bridge, as this renders difficult of access to enemies a nest that would otherwise be easily destroyed.

Probably at least two broods are reared each season, as occupied nests may be found from the last week in April until early August at least, the height of the breeding season being the month of June.

Very little variation exists in the nests of this species, all of them consisting of a firmly built wall-pocket composed of mud pellets mixed with long horse-hair and dry grass stems, and lined with chicken feathers in preference to all other materials, even when it requires long journeys to secure them. One pair of Barn Swallows that nested not far from my home, lined their nest entirely with white feathers, although the nearest farmhouse was half a mile away.

This species feeds almost entirely a-wing, and it is not surprising to see half a dozen Barn Swallows following a mowing machine during haying time on a ranch where alfalfa is raised, gathering in the insects which take flight as the machine passes.

TREE SWALLOW. *Iridoprocne bicolor* (Vieillot).

The Tree Swallow is the only representative of the family Hirundinidae that is to be found in Fresno County during the winter months. The species is migratory to a great extent, but a small number winter in this part of the San Joaquin Valley each year, being met with in the vicinity of ponds and sloughs more often than elsewhere.

November 29, 1904, two Tree Swallows were seen flying over a small body of water near New Hope, and the following day a flock of a dozen birds was noted flying over another pond near the same place. January 25, 1905, a lone bird was observed near Clovis as it flew overhead, traveling toward the south and twittering cheerfully. February 13, 1906, another was seen travelling in the same direction. February 27, 1906, and the following day, several were noted, all southward bound. This tendency of the Tree Swallows to travel toward the south during January and February has been mentioned before (CONDOR, XIII, 1911, p. 168); but I have not yet been convinced that these same individuals are a part of the migrant host that appears from the south during early March (6, 7, and 13, 1906), just in advance of the other species of swallows that summer with us or pass on through the valley.

April 26, 1909, a scattered colony of Tree Swallows was nesting in various natural cavities and behind loose bark, in a number of large old sycamore trees growing in a wide grassy flat near the San Joaquin River above Riverview. None of the nests were examined but the reluctance with which the birds left their nests seemed to indicate that they were incubating full sets of eggs. Elsewhere I have come upon but one colony of this species, and that was at Shaver Lake in the Sierras, at an elevation of about 5300 feet, where the nests were in dead pine stubs standing in the lake. The date was May 28, 1908, and the nests contained small young or eggs highly incubated.

It is a difficult matter to determine just when those individuals that spend their summer north of Fresno pass through this place in the fall, but probably their departure is made at the same time as, and in company with, the flocks of other swallows. This, however, is merely conjecture, as I find that after the breeding season an entire colony will scatter over the valley and gradually diminish in numbers, until the observer finally comes to realize that the species has all but disappeared, leaving no clue to the time or cause of departure.

NORTHERN VIOLET-GREEN SWALLOW. *Tachycineta thalassina lepida* Mearns.

This species occurs commonly and sometimes abundantly as a migrant through this part of the San Joaquin Valley, arriving in the spring about the same time as, but not always in company with, the several other species of swallows that pass through in large numbers. Two of my earliest dates for spring arrivals near Fresno, are March 16, 1903, and March 17, 1906. The great majority of these swallows pass on northward, but a few small colonies find conditions suitable for their requirements along the San Joaquin River just where it comes out of the hills. No time is lost after their arrival, in beginning the serious business of nest building. A small colony encountered March 25, 1906, just eight days subsequent to the date of the first arrival that year, was flying around and into the cavities of a dead sycamore stub that contained a dozen or

more woodpecker excavations. At this time none of the birds were carrying nesting material, but in 1908 at least one pair of these swallows had made some progress on their summer home, as early as March 28. They were seen to enter a dead sycamore branch time and again, first carrying a dry twig, then a grass stem, in a most businesslike manner. This instance of what seems to me very early nesting has been recorded in *THE CONDOR* (XIII, 1911, p. 168).

The return flight in the fall has been known to begin as early as September 12 (1903), and it continues for nearly a month, as I have a definite record for October 8, 1905. The southward migration is made in a leisurely matter, and often nearly a whole day is spent in circling over a pond of water or an alfalfa field, with occasional perchings on telephone wires.

I have often thought as I watched one of these iridescent beauties, as it skimmed along over a field or perched on some dead branch, that here at least was a case where the common name was highly appropriate. Were some of our other birds as well named it would not be such a difficult task to answer some of our non-ornithological friends when they ask us why *Podasocys montanus* is called "Mountain" Plover!

ROUGH-WINGED SWALLOW. *Stelgidopteryx serripennis* (Audubon).

The steep banks along the San Joaquin River that afford safe retreats for Rock Wrens and Barn Owls, have seemingly also met the conditions required by this swallow, and each spring finds several small colonies scattered along the bluffs in the vicinity of Lane's Bridge. This species arrives during late March or the first few days in April. They were observed in small numbers April 6, 7, and 8, 1911, when Mr. Grinnell and the writer found them as single individuals circling over the alfalfa fields, or prospecting in pairs along the face of the bluff, where they were seeking nesting sites.

It probably requires a full month's time after their arrival for the Rough-winged Swallows to complete a nest and begin the duties of incubation, for nest building was still in progress on April 29, 1911.

Natural cavities or those excavated by some of the smaller mammals are chosen, but before occupancy they are thoroughly renovated, as is evidenced by the small mounds of dust, leaves and trash that are to be seen below the entrances to occupied cavities.

I believe that only in exceptional cases do the birds excavate their own nest cavity, as the hard formation of these banks would seem to make such a task very difficult. Dry leaves, grass stems, and not a few twigs enter into the composition of the nests. These are placed from two to four feet from the entrance, and often several inches above the mouth of the excavation, so there is no possibility of even a driving rain entering their tunnel.

In the spring migration, and again when they depart in the late summer, it is probable that these swallows follow the course of the river, for some distance at least, as the birds are seldom observed away from the water at any time.

CEDAR WAXWING. *Bombycilla cedrorum* Vieillot.

Although the author has spent the past eleven winters in Fresno County, the presence of Cedar Waxwings has been noted just twice previous to last winter.

The first time the birds were seen was on the cold foggy morning of De-

ember 30, 1906, when a flock of about fifty was encountered in the fig trees near the Las Palmas vineyard, east of the city. I was much interested in their subdued lisping twittering, and especially in their manner of flight. As I drove along they would perch in the top of some leafless tree; suddenly the whole flock would take wing, with the intention, seemingly, of leaving the state, but after flying a few yards they invariably dropped *en masse* into the top of another tree in a surprisingly abrupt manner.

The 9th day of the following March another flock of about the same number of birds was found in the tall cottonwoods along Dry Creek east of Clovis, but unlike the first ones seen, they were wild and unapproachable, and remained in the tallest trees, from which they took wing whenever I came within three or four hundred feet of them.

The winter of 1910-11 was remarkable for the great number of Cedar Birds that frequented the valley. They were first seen about the middle of February, but did not become especially noticeable until the rainy week beginning March 1, when half a dozen flocks, varying in size from a dozen birds to nearly a hundred, were seen in various parts of the city. All through the stormy weather of March they remained, and even when the rain gave way to a succession of warm sultry days in early April, they showed no disposition to leave. Four individuals were seen on May 9, a small flock on the 17th, and a large flock, the last of the season, on May 24. In the last instance the birds flew into a large mulberry tree in the city.

A curious departure from the usual feeding habits of these birds was noted during their sojourn in the valley, for they fed almost entirely on raisins, and from all indications the diet had a most beneficial effect upon them. Along the railroad reservations on each side of the city are numerous packing houses, and around the rear of each of these may at any time be found a varied assortment of raisin stems and other refuse, among which there is a small quantity of perfectly good raisins. How the waxwings became aware of this food supply is not easily understood, as they would hardly be expected to select as a feeding ground the buildings along "Raisin Row," but be that as it may, the fact remains that nearly every house had its attendant flock of birds. They remained motionless for an hour at a time perched with almost military precision along the edge of the roof, to suddenly become an animated mass of hissing, excited birds that greedily scratched and tore through the piles of stems in search of the few raisins that still adhered thereto. Sometimes when partly concealed I have had a flock of waxwings within six feet of me, and they paid little attention to the presence of a man at a distance of thirty feet, so long as that individual did not appear to notice them. The slightest recognition, or a sudden move toward them would send the whole flock away in wild disorder.

When not actually feeding, these birds could be found in the tops of some tall leafless elms along one of the residence streets, where it seems probable that they spent the night, as the first faint rays of daylight often revealed them sitting motionless on the topmost twigs. Surely a colder or more exposed site could not have been selected.

The small boys with their sling shots found the waxwings always willing to allow them to test their skill, and not a few of the birds succumbed from that

cause; while several others are known to have perished from strangulation, in an attempt to swallow a raisin too large to pass down the throat.

The majority of the specimens examined showed very little of the wax-like tipping on the wings, only one bird having a sufficient amount to be noticeable at a distance of thirty feet.

PHAINOPEPLA. *Phainopepla nitens* (Swainson).

Phainopeplas occur commonly along the oak covered hills of the Upper Sonoran zone, which extends along the western slope of the Sierras in this county. Only on rare occasions do they get down into the valley.

March 26, 1906, I was somewhat surprised to hear the call of this species on Dry Creek, some seven miles east of Clovis, and soon located the bird, feeding in a bunch of mistletoe that grew in a large cottonwood. This was a female bird and it remained in that vicinity for some time, as I heard the unmistakable call near the same place on April 15, when I happened to be passing nearby.

CALIFORNIA SHRIKE. *Lanius ludovicianus gambeli* Ridgway.

The "butcher bird," as this species is generally called, is found in abundance on the arid plains west of Fresno, and on the large wheat and alfalfa ranches to the southwest, and it is met with little less commonly all through the more highly cultivated districts to the east of the city. It seems equally at home anywhere in the valley, while in late June, 1906, a pair were seen on a board fence above Toll House, at an elevation of about two thousand feet and quite above the digger pine belt.

Certainly no one can but feel an interest in this bird in spite of his rather bad reputation, which he seems to deserve, in part at least.

I have been impressed with the wonderful eyesight that this species possesses. Frequently I have seen one of these birds fly a distance of sixty feet or more from its perch, and pick up an object so small that it was not visible to me at less than half that distance.

During the summer months a surprising number of grasshoppers, lizards, and small horned toads are hung up, presumably to dry, with a thought, possibly, of providing against a time of food scarcity. Sometimes these unfortunate creatures are impaled on a barb of a fence wire or a splinter of wood, but as often they are wedged into a small fork of some bush or shrub.

Several instances of attacking and killing smaller birds have come to my notice. One evening just before dark I heard a commotion in a large blue gum tree, and arrived on the scene in time to see a shrike flying away with a Linnet. The prey was almost too much for him to carry, however, so I started in pursuit. I finally caused the outlaw to drop his victim, but just too late, for, with a convulsive gasp, the finch expired in my hand. On March 11, 1904, while driving home through the rain, I saw a shrike fly up from some weeds at the roadside. He was carrying a small bird, and made an attempt to alight on the lower wire of a fence, but was compelled to drop the bird in order to maintain his balance. As the shrike sat facing me he appeared to be all that his common name implies. A large tuft of bloody feathers was still held in his bill, while another villain rasped his approval from a nearby post.

On October 29, 1905, I drove two butcher birds from a feast they had just

begun. A goldfinch had been impaled on a fence barb, stripped of feathers, and partly devoured. Their rasping notes never sounded more unmusical, and they seemed to be expressing their opinion of me in no uncertain terms for disturbing them. A number of other similar instances have come under my notice, and in the majority of them the Western Vesper Sparrow has been the victim. As the shrike seems to be on the increase, especially throughout the cultivated districts, he may in time become quite a menace to the welfare of some of our smaller birds.

In the region about Fresno, where trees are fairly numerous, the California Shrike nearly always selects a tree as a place in which to build its nest, but out on the treeless plains, westward from the city, they often select rather extraordinary nesting sites. On March 20, 1907, a nest was found near McMullen in a bunch of tumble weeds that were lodged against the railroad fence. This nest, which held six eggs, was just one foot above the ground, while another, scarcely an arm's length away, appeared to be of the previous season's use. April 6, 1906, a nest was found on a sill in an old abandoned barn near the New Hope school-house. There were three eggs in this nest, and one more was found on some straw beneath. The nest had listed somewhat from having overbalanced in its rather insecure situation. Another nest with five eggs was found on top of a gate post between two nearly vertical boards, in just such a situation as would be chosen by a pair of Western Kingbirds. The few willow and poplar trees in that region contained one or more nests each.

On March 21, 1907, while looking up nests of the Western Red-tailed Hawk, along a steep, rocky canyon on Little Dry Creek, I discovered a bulky nest fifteen feet up in a scrub oak. The nest was supposedly that of a California Jay, so of course I began to tear my way up through the numerous short, stiff branches, but I had not climbed far before a pair of shrikes put in an appearance and began protesting. The interior of the nest and the four eggs it contained did not differ from those found in the valley, but the birds seemed strangely out of place on that rocky hillside, with oak trees all around and the roaring creek with its towering sycamores far below. At this time, and during a second inspection made on April 3, at which time the nest held small young, the parent birds were fearless, and I could have almost caught them with my hands.

In the vicinity of the city the favorite nesting sites are in the ragged, bushy willows that are found along canals, the nests being placed from two to twenty feet above the ground, averaging, however, about eight feet. A row of poplars along the roadside is a close second, for numbers of nests, while others have been found in grape vines, piles of brush, eucalyptus and fig trees, and rarely in umbrella trees.

Nests of the California Shrike are bulky and well built, with a foundation of twigs and coarse weed stems, the inner cavity being compactly put together with fine, stiff grass and weed stems. Where wool or cotton is obtainable a thick coat of these materials is used as a lining, but in the absence of these, various kinds of plant fuzz and woolly seed pods are made use of. I have met with but one instance where any feathers were used for lining, and in that case feathers were about the only material obtainable.

Below are given my records of thirty-one sets of the California Shrike examined during the last ten years:

	Date		Contents of Nest	Incubation
(1)	April 8	1902	5 eggs	begun
	" 11	"	5	far advanced
	" 11	"	6	advanced
	" 11	"	7	6 addled eggs, 1 bird
	" 12	"	4	fresh
	" 21	"	5	begun
(2)	" 23	"	6	begun
	" 27	"	6	far advanced
	May 12	"	6	begun
(3)	" 12	"	8	begun
(4)	" 31	"	7	slight
	April 6	1906	7	" nearly fresh
	" 6	"	7	" large embryos
	" 6	"	7	" about half
	" 7	"	6	" well begun
	" 7	"	5	" probably well along
	" 10	"	6	" begun
	" 15	"	5	" fresh
	" 24	"	5	" begun
	" 25	"	6	" begun
	March 9	1907	4	" small embryos
	" 20	"	6	" good sized embryos
	" 20	"	6	" nearly fresh
	" 21	"	4	" begun
	April 17	"	5	" small embryos
	" 11	1908	4	" advanced
	" 12	"	5	" well begun
	March 29	1909	7	" fresh
	" 31	1911	6	" incubation not determined
	" 31	"	6	" incubation not determined
	April 11	"	7	" advanced

The figures before certain dates in 1902 indicate the first, second, third, and fourth sets of one pair of birds, a more complete record of which can be found in THE CONDOR (xI, 1909, pp. 82, 83).

From the foregoing table it might seem that practically all our shrikes nest in April, with only an occasional early pair starting housekeeping in March, but it should be noticed that the list enumerates nests with eggs only, no record being given for nests with young birds. On April 6 and 7, 1906, besides the five nests mentioned, nearly a dozen were observed that held young birds, some of which climbed from the nest at my approach. Mr. Joseph Sloanaker reports a nest of almost fully fledged young found near Raisin on March 31, 1911. On April 12, 1902, I found in a large willow a nest that the young had just left, as they were still climbing about in the branches, while but a few feet away, in the same tree, the parents had a new nest with a single fresh egg.

On the plains to the west and southwest of Fresno, fully as many occupied nests could be found in March as in April, and two broods are often raised; but throughout the cultivated region east of the city it is not often that a nest contains eggs before the first week in April, and seldom, if ever, is more than one family raised in a season.

A difficult task awaits the ornithologist who attempts to convince some people that the series of liquid, musical, warbling notes, often heard in winter or very early in the spring, are really produced by a "butcher bird." I cannot agree with those who suggest that the song is given from a place of concealment and for the purpose of attracting smaller birds within striking distance. On every occasion when this song was heard I have been able to locate the bird perched on the highest point of vantage to be found. Sometimes the top of a tall weed is selected, often a fence post or telephone wire is chosen, and not infrequently the topmost branch of a leafless tree is made use of. In either case the bird is generally visible for a long distance.

As almost all of our feathered neighbors, by song or mannerism, make known to us the approach of their nesting time, it seems to me that the vocal effort of our shrike is nothing less than an expression of exuberance he feels at the approach of another nuptial season.

CALIFORNIA LEAST VIREO. *Vireo belli pusillus* Coues.

On more than one occasion the writer has endeavored, while listening to this bird, to formulate a good description of its remarkable song, if such vocal efforts could be called by that name. Each attempt, however, has been a failure. The only object of the bird, seemingly, is to keep everlastingly at it, much as some people sing or whistle at their work, almost unconscious of the fact themselves. Over and over, for hours at a time, the Least Vireo repeats its succession of seven or eight not very musical notes with a persistency worthy of a better effect, yet there is a certain indefinable charm about it that prevents the song from becoming monotonous.

The volume of sound seems much too great to come from so small a bird; but the little singer never seems to tire, and continues to vocalize, always with the same zest, as it searches for food totally oblivious of the presence of any other creature. Sometimes, but not often, the Least Vireo raises its voice and emits a little squeaky mouse-like song for a few seconds, but always drops back at once to the same old grind again.

In the Fresno district, from the first of April until the end of the nesting season, the Least Vireo is a common species over much of the lower part of the valley, being found along the canals and ditches. Here it frequents the willows preferring the large trees, when on its foraging expeditions, rather than the more dense growths of saplings, but choosing the lower clumps for suitable nesting sites.

May 25, 1906, during a steady rain that prevailed the greater part of the day, I was so fortunate as to find two nests of this bird, built but a short distance apart, in the willows along the Gould ditch southeast of Clovis. One of these nests was hung in the forks of a small, swaying, green willow branch, just four feet above the ground, in a dense growth of horizontal willow shoots clustered thickly around the stump of an old tree on the ditch bank. Rank

grass and wild oats partly concealed the nest, and a neater, more skillfully woven one it would be hard to imagine. The upper walls were less than a quarter of an inch in thickness but were so well put together with very fine dry grass stems, plant fibers, and cotton, as to be quite waterproof. The inside diameter was one and three-quarter inches while the interior depth was one and one-half inches. There were four fresh eggs.

In marked contrast was the second nest, which was suspended in plain view, from a dead branch three feet above the ground, near the path along the ditch bank. The very lack of concealment made this nest rather difficult to detect, even after I had first discovered it, as on a subsequent visit it required no little search to find it. The owner was covering four heavily incubated eggs.

Other nests found were in similar situations often being suspended directly above the running water and scarcely a foot from it. In two cases that came under my notice, however, the nests were fully twelve feet above the ditch in large willows, one of them being artfully concealed in one of several tufts of a cotton-like substance that had lodged in the branches. The nesting season of this species is a very short one, as my earliest record is May 15, 1910, for an incomplete set of fresh eggs, while the few nests discovered after the last week in May were found to contain small young. Justice to the various owners of the several nests discovered, compels me to confess that they were not detected by any skill on my part; for in every case, so far as I remember, I was attracted from some distance by the persistent singing of one of the birds, either on or very close to the nest.

CALIFORNIA YELLOW WARBLER. *Dendroica aestiva brewsteri* Grinnell.

Yellow Warblers are common summer visitants in limited numbers along nearly all the water courses in the valley. I have not found them breeding anywhere except in the willow association that marks the larger canals and sloughs. This network of ditches is selected as a migration route by this species, as well as by nearly all the others of the smaller migrants that pass through this part of the state. Although quite a noisy, persistent singer the Yellow Warbler is not much in evidence in spite of its gay plumage.

Ordinarily this species arrives in the vicinity of Fresno during the last week in April, and remains, probably, until late July. All of the nests the writer has examined, were composed to a large extent of a silvery colored, long plant fiber, and were placed from six to thirty feet above the ground in the small forks of willow trees, where the colors of the nest blended well with the light colored branches.

Four eggs almost invariably constitute the set, and I have found them far advanced in incubation on May 30, and only slightly incubated in mid-June.

AUDUBON WARBLER. *Dendroica auduboni auduboni* (Townsend).

One of the characteristic winter visitants to the valley is the Audubon Warbler, that restless mite of animation, whose energy seems unlimited and whose appetite is never quite satisfied. With a businesslike "chick" he sallies forth from a leafless cottonwood to seize a passing insect, then with the same "chick" he resumes his search among the branches for whatever may offer. The trees around a farmhouse, and a lonely grove far from the sound of human

voices, are equally attractive, and each has its share of birds from late September until the last of them have departed early in April.

Audubon Warblers share with Say Phoebes the habit of catching flies from a window, sometimes becoming so engrossed in this occupation as to cling for several seconds to the screen where a south-facing window affords a bountiful supply of this kind of food.

A period of two or three unusually cold nights frequently results disastrously for these little warblers, and my observations show that there is a greater mortality among this species than in all other birds combined. After a hard freeze it is not an uncommon occurrence to see certain individuals that appear so benumbed as to be almost unable to fly, and not a few dead birds have been found under trees along the streets. Probably we are safe in assuming that these unfortunates have either been injured at some time, or have become weakened through lack of food, and have finally been unable to succeed in the struggle for existence.

Since the cultivated areas with orchards and vineyards provide a foraging ground that is probably almost as productive as the former wild growths, we may expect the Audubon Warblers to be influenced less by the rapid transformation of the country than almost any other winter visitant.

BLACK-THROATED GRAY WARBLER. *Dendroica nigrescens* (Townsend).

This warbler is given a place among the birds of this district on the authority of Miss Winifred Wear, who mentions seeing a single bird near Fresno, May 15, 1907. If this species occurs commonly anywhere in this region, it is during the spring migration; but as this part of the San Joaquin Valley appears to be not in line with the route followed by most of the migrant warblers, it is probable that *Dendroica nigrescens* appears only as a straggler, and at more or less infrequent intervals.

WESTERN YELLOWTHROAT. *Geothlypis trichas occidentalis* Brewster.

This is one of the handsomest, and unfortunately one of the shyest, of the warbler family that occurs in the Fresno district. Unless the observer is familiar with its song the species might remain undetected where it is really quite common. April 6, 1911, Mr. Grinnell and the author found the Yellowthroats present in some numbers in the rank growth of nettles and young willows in the river bottom near Lane's Bridge. Several pairs, probably, were frequenting the tangle near camp.

The distribution of this species over the valley is limited to such tracts as have felt the influence of irrigation; hence Yellowthroats, like our song sparrows, are found for the most part along canals and in the few natural swampy areas. The flume ponds east of Clovis support a few pairs annually, and each spring I have seen one or two along the Gould ditch. It seems safe to assume, although it has never been proven, that the overflowed areas near Wheatville would support nine-tenths of all the Fresno County Yellowthroats. Although the writer has at times searched persistently he has succeeded in finding but one nest, and that one was stumbled upon unexpectedly April 22, 1906, in a willow swamp near Sunnyside. A bunch of tules about eight inches above a pool of slimy water supported the nest, which was in all respects remarkably like the average

song sparrow's work, though perhaps just a shade smaller in interior measurements. This nest was overrun with ants, but they had not in any way damaged the single fresh egg. The nest was a framework of dry grass, scantily lined with horse-hair. During the time that I was present one of the owners of the nest remained nearby, frequently uttering a guttural "chuck", but always keeping well concealed in the tules.

LONG-TAILED CHAT. *Icteria virens longicauda* Lawrence.

The splendid whistling voice of this near rival of our Mockingbird often greets the bird student who prowls about among the thick clumps of willow saplings and tangled vines. We are probably safe in assuming that the owner of that voice is not far away, but it usually requires a deal of patience and no little caution to prove the correctness of such a surmise.

I consider the Chat a regular summer visitant to this part of the valley, but in very limited numbers. Usually, somewhere along the course of one of the larger ditches, a pair of Chats are to be encountered, but it may be a mile to the next pair.

April 29, 1911, long before reaching the thick growth of the river bottom near Lane's Bridge, I was aware of the presence of, it seemed, not less than fifty Chats. The willows fairly echoed with their voices, as the birds whistled, called, scolded, sang, and chattered, apparently from half-a-dozen places at once; and it was with some difficulty that I convinced my companion that this medley of notes was produced by just one pair of birds.

Often, in early summer, I have heard the scolding of this bird near Tarpey, where, along a large ditch, a number of blackberry vines have run riot among the willow shoots. It was there, on June 12, 1910, that I found a cleverly concealed nest built three feet above the ground. This nest contained in its make-up a number of dead leaves having a texture much like paper, the whole nest being remarkably light in weight. There were four eggs in which incubation was just begun.

GOLDEN PILEOLATED WARBLER. *Wilsonia pusilla chryseola* Ridgway.

From the evidence at hand it seems that this handsome, black-capped warbler pursues a course on its northern journey in the spring different from the route selected for the return migration in the fall. At any rate this species has not been observed before the nesting season, but appears regularly in limited numbers during the month of September. *Chryseola* is an early migrant, my earliest record being September 17, 1905, when a single bird was seen. From that time until the end of the month they were quite common, and frequented the brush piles and low bushes rather than the higher trees. I have no record of a Pileolated Warbler occurring later than October 8 (1904), so it seems that these birds must hurry through the valley with hardly a pause. Probably the food supply during September is at low ebb, and the birds find it necessary to seek more profitable foraging areas.

AMERICAN PIPIT. *Anthus rubescens* (Tunstall).

Pipits are of common but somewhat irregular occurrence through the winter, over nearly all the region about Fresno. Their querulous voice, their

nervous teetering up and down as they run along the ground, and especially their habit of suddenly dropping into a field or vacant lot to begin feeding greedily, often tends to create the impression that they are transients, and have just stopped over for lunch in the midst of a long journey.

Open fields, especially those that have been recently plowed or are free from weeds or stubble, are the favorite feeding grounds of these birds; and it is probably because their requirements in this regard are so similar to those of the California Horned Lark that the two species are often found together.

Pipits arrive in the fall about the middle of October along with the host of migrant sparrows, my earliest record being October 20 (1905). In the spring the last individuals do not depart for their northern nesting grounds until well into April. I have a definite record of one seen April 11, 1906.

This species was unusually numerous during the past winter (1910-11), one flock feeding in the railroad yards in the city, where they were often seen, especially late in the afternoons and on dark, cloudy days just preceding rain storms.

WESTERN MOCKINGBIRD. *Mimus polyglottos leucopterus* (Vigors).

Mockingbirds are so well and favorably known that extensive comment upon them seems unnecessary. It might not be out of place, however, to give a few dates from this locality for comparison with those from other parts of the state.

This species is, on the whole, one of the most abundant of the non-gregarious birds occurring in the Fresno district, their numbers not varying noticeably from year to year in the cultivated areas, but showing a decided increase wherever new tracts of land have been brought under cultivation in recent years. The writer has observed Mockingbirds in a small orchard surrounding a ranch house, far out on the plains near Wheatville, among the tangle of swamp growths below Riverdale, and along one or two of the creeks that lead down from the foothills; but the center of their abundance seems to be the most highly cultivated and thickly settled tracts in the valley. Orchards, hedge rows, fig-bordered vineyards, and shade trees around dwellings are favorite haunts of this famous vocalist; and from the tops of windmills, the topmost branches of trees, or the roofs of buildings, they pour forth their wonderful repertoire of song. They sing not only during the daylight hours, but, in summertime, frequently throughout the entire night as well, especially if it be moonlight.

The nesting season commences in early April, as is evidenced by the finding of a nest with four considerably incubated eggs on April 11, 1911, and numerous other nests all through the same month. Not until the first half of August has passed may we feel safe in asserting that the breeding season has closed.

August 6, 1902, a nest was found with three small young birds, August 1, 1904, another nest contained three incubated eggs, and on the same date the following year a pair of these birds were found to be incubating a set of five eggs. My records for July, as well as May and June, are too numerous to mention. Three or four eggs usually constitute the sets, but five is not an uncommon number. A record of forty-one sets definitely recorded shows seventeen

of three, eighteen of four, and six of five eggs each, and this proportion would probably hold good from year to year.

A tendency to deposit their eggs late in the forenoon has been noticed in this species, more than in any other. April 25, 1907, a nest was found with two eggs, and neither of the owners were anywhere about although it was then after ten o'clock. Shortly afterwards one of the birds flew to the nest, and a glance into their home in mid-afternoon revealed a third egg. This and other similar instances somewhat upset a theory that I had entertained in my younger days, to the effect that birds, as a rule, deposit their eggs early in the morning.

It may be said that any kind of a bush, shrub, or tree that affords some slight degree of concealment is liable to be chosen as a nesting site. The height from the ground varies from two feet when the nest is built in a grape vine, up to fifteen feet in willows, but an average height would be from five to seven feet.

Any mention of this species would be incomplete unless the writer related a rather amusing incident that occurred several years since. A lady visiting this city from Pasadena was heard to express her dislike for a place where Mockingbirds were not to be found, and she assured one of her friends that in the two or three days that she had been in this vicinity she had neither seen nor heard one of these, her favorite birds. All this despite the fact that not sixty feet distant in the top of a shade tree, a Mockingbird was pouring forth a flood of melody that could hardly have failed to arouse enthusiasm in any bird lover, even had the bird been concealed!

CALIFORNIA THRASHER. *Toxostoma redivivum* (Gambel).

This thrasher is mentioned on the authority of Miss Winifred Wear, who records a single bird seen in the brush near Riverview, on the San Joaquin River, May 9, 1908.

The writer has seen but one thrasher in this part of the state, and that one was observed on a brush-covered hillside above Toll House, June 27, 1906. Upon being too closely approached the bird arose and flew across a small canyon. This record is, of course, outside the limits of the region treated in the present paper, but is given on account of the rarity of the species in Fresno County.

ROCK WREN. *Salpinctes obsoletus obsoletus* (Say).

Along the rocky bluff that parallels the San Joaquin River near Lane's Bridge, several pairs of Rock Wrens find conditions suitable to their requirements, and may often be seen climbing up the rough surface of a boulder or engaging in short flights along the face of some ledge. The loud whistling song, echoing along the bluffs, is one of the most pleasing of all the tuneful ditties that greet the bird lover, but perhaps just a little of its charm lies in the fact that the only other bird voices heard in contrast are the screams of the Barn Owls that sally forth at dusk from these same cliffs, and occasionally the cawing of a band of Crows over among the willow thickets.

On the ninth of April, 1911, a Rock Wren's nest was found in a small cavity that led upward about three feet in the soft crumbling rock. The entrance was quite conspicuous, even at some little distance, on account of the many small pieces of rock that were placed about the mouth of the excavation in such a manner as to leave only a very small hole through which the wrens en-

tered. As a means of protection against the various rodents that inhabit this bluff, no doubt, a number of thorny twigs were placed near the entrance and down the small passageway that led to the nest cavity. There a loose collection of dry grass stems was placed in a slight hole scratched in the dry dust. At that date the female had not commenced to lay, although the nest was apparently ready for eggs.

Three weeks later another pair of wrens were found singing near a small cave, and one of the birds was seen to fly from the inside on two different occasions, but no nest was to be found.

**SAN JOAQUIN WREN. *Thryomanes bewicki drymoeceus* Oberholser.**

The nature of the country about Fresno is not such as to attract wrens of any kind in numbers. Wood sprites they are, and must have a well timbered country; so it is not surprising that the present species occurs, within the range of this paper, principally along the San Joaquin and Kings rivers and at the mouth of one or two of the creeks that lead down out of the hills. From these places they make somewhat extended visits to other parts of the valley during the winter months, and are sometimes encountered in brush piles along the canals and ditches. Here they climb over logs, dodge into brush heaps, or pry into the holes in partly dead willows, picking up from such places whatever offers in the way of food. While quite generally distributed some winters, they are not at any time abundant.

April 8, 1911, the writer secured for identification an example of this wren from a large, ragged old willow tree growing near the river below Lane's Bridge. This specimen is now in the Museum at the University of California, and has been identified by Mr. Grinnell as the "San Joaquin Wren", a form not recognized by the A. O. U. Committee, but which differs markedly from typical *charienturus*.

April 20, 1912, wrens were heard singing in the tangle of brush and willows at the Madera County end of Lane's Bridge. When I remained quiet for a few minutes one of the birds appeared with a bill full of what seemed to be nesting material. She sang several times but seemed to be suspicious. I was not able to wait for her to reveal to me the location of her nest, which was no doubt located somewhere about the timbers of the bridge.

**TULE WREN. *Telmatodytes palustris paludicola* (Baird).**

Marsh wrens of any species are far less numerous in Fresno County than would be expected, when we consider the hosts of marsh blackbirds that are attracted to the valley, and find conditions well suited to their needs.

In all my tramping among the tules, and wading in frog ponds, I have never found a nest of these little wrens; neither have I ever seen one of the birds during the summer months. In midwinter, by tramping through the tule beds and along ditch banks, a marsh wren may sometimes, but not often, be made to take wing. From the information at hand I should put this species down only as a regular but not abundant winter visitant.

A specimen collected near Raisin City, November 10, 1910, by Mr. Joseph Sloanaker, has been identified by Mr. Grinnell as *paludicola*.

**SIERRA CREEPER. *Certhia familiaris zelotes* Osgood.**

The winter of 1910-11 was remarkable for the number of unusual visitants among our avian friends, that appeared in the vicinity of Fresno. By no means the least interesting of these were the little creepers, which occurred quite numerous in the willow trees that border some of the larger ditches, and doubtless elsewhere as well. December 26, 1910, and February 18, 1911, were the only days that I was able to spend in the country, but on each occasion creepers were found along the Gould ditch near Clovis, where, for the first time, I heard their squeaky, chattering song, if song it might be called.

Nature has decreed that the creeper must seek its food, not among the branches as the warblers do, but from the rough bark of the tree-trunk; and to facilitate this she has provided them with sharp spine-like tail feathers, such as the woodpeckers have, to assist in clinging to the tree as the bird hitches up and around a tree trunk. The relatively wide, flat body of these little birds tends to give them a certain resemblance to lizards, and the spotted brownish back looks, at a little distance, as if it might be covered with scales instead of feathers. Really, the resemblance that a creeper bears to a lizard as it sidles up a branch, is at times remarkable.

The creeper's method of concealment is as effective as it is unique. On one occasion I was watching one of these little birds in a small willow tree, when a Sharp-shinned Hawk flew over with a Mockingbird in its talons. As the report of the shotgun died away I was sure that the creeper had not flown; but after picking up the hawk I could not again discover my little friend, so began a careful scrutiny of every branch. After completely encircling the tree, I finally detected the creeper flattened against the trunk not ten feet from the ground. Although I could probably have dislodged him with the gun barrel, he had not moved in several minutes, and so perfectly did his plumage blend with the colors of the rough bark that the bird would certainly have been passed unnoticed had I not been aware of almost his exact location.

**SLENDER-BILLED NUTHATCH. *Sitta carolinensis aculeata* Cassin.**

This is another bird that is given a place on the present list as a result of the observations of Miss Winifred Wear, who has informed me that the species was found in the oaks near Laton, February 17, 1909. The Slender-billed Nuthatch should be confidently looked for in winter throughout the oak covered region south of Fresno, and possibly along the San Joaquin River below Friant; but over most of the valley the conditions are hardly suitable for a bird that is so closely associated with oak timber.

**RED-BREASTED NUTHATCH. *Sitta canadensis* Linnaeus.**

I have been unable to find more than one record of the occurrence of this nuthatch anywhere in this part of the valley. Miss Winifred Wear was given a single bird by one of the children in her school, late in the winter of 1911. The writer examined this specimen but did not at the time note the date of capture, or sex, and it seems to have disappeared from Miss Wear's collection. Unfortunately there was no data other than that on the tag which was attached to the skin.

**PIGMY NUTHATCH. *Sitta pygmaea pygmaea* Vigors.**

I have only one record of this handsome little nuthatch, and that is of a single silent individual that I chanced to find on the afternoon of November 1, 1903. A large cottonwood tree growing on the bank of the Gould ditch some two miles south of Clovis seemed to offer great possibilities in the way of food for the nuthatch worked head downward from the highest branches to the base, and then flew up near the top several times to begin a more thorough search for some morsel overlooked on the previous round. What a number of insect eggs this one bird must have gleaned from even a single tree! The occurrence of this bird was recorded in *THE CONDOR* (XI, 1909, p. 81).

**CALIFORNIA BUSH-TIT. *Psaltirparus minimus californicus* Ridgway.**

Over the greater part of the floor of the valley there is an entire absence of these little mouse-like birds, due, no doubt, to the lack of brush suitable for the characteristic foraging expeditions, such an essential to every well ordered flock of bush-tits. The species is very common all through the foothills, but so far as I have been able to observe, it occurs within the limits of this paper at only two or three points. It is resident in the brush and willows along the San Joaquin River below Friant, and doubtless follows down the Kings River bottom for some distance, at times.

A small flock of bush-tits that have often been encountered along Dry Creek, six miles east of Clovis, proved to be less noisy than is usual with this species, and uttered their lisping "tsit," "tsit," at rather infrequent intervals, even when the little flock was scattered over considerable area. They always appeared to be in a hurry, and hardly paused in any tree long enough to make a thorough search for the minute insects they sought.

Nest building with the members of this species begins very early in the spring as was shown by a nest found on the first day of April, 1906, in which were three tiny birds and three eggs on the point of hatching. This was a bulky, thick-walled pouch, suspended from a bunch of dead mistletoe just twelve feet from the ground, in a large cottonwood tree growing in the creek bed. In spite of the size of the nest it was not at all conspicuous, owing to the fact that it was composed almost entirely of willow blossoms and lichens, exactly the color of dead bark.

Two other nests examined May 9, 1908, near the same place, were very similar to the one described, and I was impressed with the thickness of the lining, especially in one of them. There was a solid mass of material almost as large as a base ball, composed of small feathers, many of them being a bright yellow color, evidently from a yellow warbler. In each of these nests a brood of young had been reared some weeks previously.

**RUBY-CROWNED KINGLET. *Regulus calendula calendula* (Linnaeus).**

The subdued scolding notes of the kinglets are sometimes heard in the shade trees about the city as early as October 15th. But not until a week or more has been spent in the higher treetops does this little creature become sufficiently accustomed to its winter home to allow us more than a glimpse of his tiny greenish form as the bird flits about from branch to branch in a most restless manner. When once its shyness has been overcome, however, this is one of the

most fearless of all our winter birds. In point of size this species is one of the smallest of the many winter visitants to the valley, but its trim form, bright eyes, and friendly manner combine to make it a most interesting little creature. The majority of our kinglets depart for their summer homes in the mountains during late March, but as late as April 15 (1906) a few were still to be seen along the Gould ditch near Clovis.

During the winter months the kinglets often associate with Audubon Warblers, probably because the feeding habits of the two species are so similar. The frequent short, flycatcher-like sallies, with their resultant snapping of bills, indicate the capture of untold insects, often so minute as to be invisible to the human eye.

I was much interested one warm January day, in the efforts of a kinglet to remove from its plumage a quantity of resin or gum that had adhered to it from contact with the branches of a pepper tree. As the little fellow perched scarce six feet away, twisting first to one side then to the other, the occasional flash of his brilliant crown-patch contrasted strongly with the bright green background of leaves. Resting a moment after each violent exertion the diminutive creature would suddenly seize a particle of the troublesome matter in his bill, and tug until it seemed that he would actually pluck the primary feathers from his wings. Finally the gum was sufficiently removed to allow free use of each feather, and Kinglet again became a busy, restless little sprite, with no time for anything but the serious business of getting a meal.

WESTERN GNATCATCHER. *Polioptila caerulea obscura* Ridgway.

The gnatcatcher is of common occurrence in late summer and fall over the valley, but more particularly in that portion lying adjacent to the Sierra Nevada Mountains. It occurs casually at other times also, but does not breed commonly below the foothill belt. Single birds, or small scattered companies, sometimes make their appearance in orchards and brush piles as early as August 15, and from that time through all of September and the first half of October they may often be encountered. January 1, 1911, was a clear, warm day following a heavy frost of the night preceding, and I was fortunate in finding a gnatcatcher in a weed-grown berry patch within the city limits in the northern part of Fresno. The characteristic "k-gee" attracted my attention as the bird passed by, jerking about nervously. January 22 two more were seen near the same place; so that the species is sometimes a winter visitant with us.

Gnatcatchers were quite numerous in the willows along the Gould ditch, south of Clovis, during March and April, 1906, and several pairs remained to nest for the first, and also the last, time within my knowledge. A bluish-colored, lichen-covered nest found on June 6, was built fourteen feet above the ground on a dead horizontal willow branch. One of the birds was occupying the nest, in which were five fresh eggs. A more beautiful structure it would be hard to imagine, and it was almost exactly the color of the bird herself. A framework of very fine plant fibers, cobwebs and feathers, formed a light but strong basket, over which were placed tree lichens, to make the nest harmonize with the branch on which it was built.

That same day another nest was located fifteen feet up, in the vertical forks of another dead willow branch. Similar in appearance to the one described, this

nest had long been deserted, and held the dried up remains of two nearly grown young birds. Another nest, differing but little in composition or position, was found on June 23, 1906, placed twenty feet up in a large willow. The five eggs it contained were quite heavily incubated.

It would be interesting to know what peculiarly favorable conditions existed that year to attract these interesting little birds, and to induce them to remain through the breeding season.

DWARF HERMIT THRUSH. *Hylocichla guttata nanus* (Audubon).

From mid-October until March occasional examples of this thrush may be found in the willows along the ditches, where they seclude themselves for the most part in the gloomiest shady clumps of large trees. They are quite silent during the time they remain with us, and of such sluggish natures as to appear almost stupid at times. I have sometimes walked up to within five or six feet of one of these birds without causing it the least alarm. At a nearer approach it would leisurely hop to another branch, just out of arm's reach, where it would assume an air of indifference, and remain motionless for some time. The only specimen I ever collected was secured with a shot cartridge in a twenty-two caliber revolver, at a distance of about seven feet.

It is a difficult matter to attempt to ascertain in what numbers this bird occurs, as the species might easily be overlooked entirely.

WESTERN ROBIN. *Planesticus migratorius propinquus* (Ridgway).

Some winters robins appear in large numbers and spread out over the valley in flocks of from twenty to fifty or more individuals. At other times hardly a bird will be seen all winter. Climatic conditions seem to govern their abundance, and doubtless the food supply has much to do with their scarcity during certain intervals. Alfalfa fields, pasture land, and small overflowed sections are the favorite feeding grounds for Western Robins in this vicinity, and because of a like preference on the part of the Brewer Blackbird, the two species are often observed together on the ground.

Occasionally robins appear in small numbers early in November, but they are seldom much in evidence during that or the following month, and not until February do they become especially noticeable. The winters of 1903 and 1907 were notable for the abundance of these birds, particularly over much of the region northeast of Clovis and extending toward the hills.

As a rule, the last week in March may be expected to see the departure of all but a few stragglers from the lower parts of the valley, those that remain being in most cases single birds. April 4, 1907, one of these late sojourners was observed, and another was recorded the following day, while one silent individual was noted April 7, 1911, in some willows near the river below Lane's Bridge.

The caroling of these birds is seldom heard here in the valley, their most common notes being an unmusical squeak and the characteristic "kwee-kwee-kuk."

NORTHERN VARIED THRUSH. *Ixoreus naevius meruloides* (Swainson).

The occurrence of this handsome bird in winter has been reported to me on two or three different occasions; but the best record obtainable is that of Miss

Winifred Wear, who has observed Varied Thrushes several times near Fresno. In one case the bird was drinking from a hydrant in a front yard. February 27, 1907, another was seen near Fancher Creek, east of the city. The Western Robins are said to be constant companions of this thrush.

WESTERN BLUEBIRD. *Sialia mexicana occidentalis* Townsend.

During January and February each year there occurs what I term a local migration, involving, if the winter be a mild one, only a few scattered flocks of this species; but some seasons, as in 1906 and 1907, large numbers of birds are affected. A succession of two or three heavy frosts is an almost infallible sign for the appearance of Western Bluebirds, coming from the Sierra Nevada foothills. At such times these birds often fly at a great height, sometimes being almost or quite indiscernible to the unaided eye, although their clear, musical, but somewhat melancholy call notes ring out distinctly, and call attention to the loose flocks of from seven or eight to fifty birds.

So far as the writer has been able to learn, these wanderers do not commonly travel far to the westward, for bluebirds are always more common in the vicinity of Clovis than about Fresno. It would seem that the individuals prefer to remain in the hills, and leave with reluctance; so that when forced by cold or a diminishing food supply to abandon their favorite haunts, they simply scatter out over the valley, remaining as near to their former home as conditions permit.

Of a more restless nature than the Mountain Bluebird, the present species seldom remains long in one place while here, a flock continually engaging in short flights from one vineyard to another. By the 10th of March these attractive visitors have usually all disappeared.

Although somewhat out of the district included in this paper, it might be of interest to record a nest of Western Bluebird discovered on April 30, 1910. While walking along the roadside near Cottonwood Creek, in Madera County, a bluebird suddenly alighted on a branch not ten feet away, but seeing me she sang for several seconds a peculiar, subdued, warbling medley of notes, and then flew to another perch, still holding in her bill a mass of small insects of some sort. A short search revealed a nest about one foot down in a knot hole in a willow tree. The entrance was only three feet from the ground. There were several small young in the cavity.

The elevation at that place was about nine hundred feet, and while it was but a short distance up the creek to oak timber, yet it was even a shorter distance back to the dry stubble fields, the home of countless horned larks.

MOUNTAIN BLUEBIRD. *Sialia currucoides* (Bechstein).

Unlike the preceding species, this bluebird visits the lowlands regularly each winter, though in varying numbers. The present year (1912) this species was noticed in some numbers as early as October 14, but as a rule few are seen until November. The time of their greatest abundance is during the first two months of the year. March 8 (1903) is the latest I have known them to remain, and probably all the flocks depart at about the same time in the spring.

During their stay in the valley the Mountain Bluebirds are associated in small companies of from three or four to ten birds, with only an exceptional flock numbering as many as twenty-five.

A marked preference is shown for staked vineyards, where the birds spend their time either perching on the stakes or hovering in mid-air, Sparrow Hawk fashion. A company of these bluebirds in flight may be identified at a distance by their peculiar manner of poising for a few seconds on rapidly beating wings, then flying ahead in undulating swoops. They are often seen in company with Linnets, the two species frequently perching for many minutes in neighborly manner on telephone wires. The bluebirds take wing one at a time and fly ahead at the approach of an intruder, the different units of a flock sometimes becoming quite widely scattered.

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PACIFIC COAST AVIFAUNA

NUMBER 10

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HARRY S. SWARTH

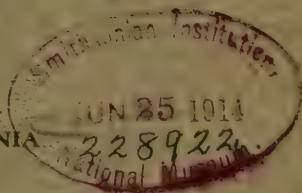
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Edited by  
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and  
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*Museum of Vertebrate Zoology*  
*University of California*

#### NOTE

PACIFIC COAST AVIFAUNA No. 10 is the tenth in a series of publications issued by the Cooper Ornithological Club for the accommodation of papers whose length prohibits their appearance in THE CONDOR.

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For information as to either of the above series, address one of the Club Business Managers, J. Eugene Law, Hollywood, California, or W. Lee Chambers, Eagle Rock, California.

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## INTRODUCTION

The beginning of this list of the birds of Arizona dates back about eleven years, to a time when the author was engaged in field work in that state. A hasty compilation was made of a few local lists, and the manuscript carried in the field as a guide and aid in making observations and collections. This beginning proved an incentive to the gathering of further data, and shortly after, the opportunity presenting itself for visiting more extensive libraries than had hitherto been available, a careful and systematic search was made through the literature dealing with the ornithology of Arizona. The resulting information was filed away and added to as chance offered, but more pressing work and other interests interfered to prevent the whole from being put into shape for publication. Furthermore it soon became evident that while a fairly long list of species could be compiled as occurring within the state, the published information concerning a large proportion of them was scanty and fragmentary. The writer had hoped to be in a position to continue field work in certain little known sections of the state, where undoubtedly there is much to be added to our knowledge of the birds, but this contingency became more and more improbable, and under the circumstances it seemed advisable to publish the list as it now stands.

It is hoped that as far as it goes this list will be found to be fairly accurate. Pertinent literature has been gone over with care, and it is doubtful if any important publication has been overlooked. At the same time it can hardly be doubted but that there are in collections specimens whose existence will modify many of the statements made here, and it is also highly probable that there are active collectors who have many unpublished records in their notes which would also occasion changes. Available collections and collectors' notes, however, have been made use of wherever possible.

The aim of the present publication is to give a list of the species of birds occurring in Arizona, with a synonymy of the names applied, as regards their occurrence within the state, and a brief but comprehensive outline of the manner of occurrence. The latter, it is hoped, is in each case as clear and accurate as the present state of our knowledge permits. An effort has been made to give a general statement outlining the range and manner of occurrence, supplemented by the citation of authorities for extreme or unusual instances. Exact dates have been given only for the rarest species, those of which but a few specimens have been recorded. The synonymy consists of those names by which the species has been known in literature pertaining to Arizona ornithology.

Thus the general manner of treatment is closely similar to that followed by Grinnell in his *Check-List of California Birds*,\* the main difference lying in the greater elaboration of detail in the outlining of ranges, and the numerous citations of authorities, in the present publication.

The order, and in general the nomenclature, of the American Ornithologists' Union *Check-List*, has been followed. Where there is disagreement from this

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\* Grinnell, J., *Check-List of California Birds*. Pacific Coast Avifauna, no. 3, 1902, pp. 1-92, 2 pls.

standard it is usually in cases where the author's personal experience leads him to a different view; but there are one or two instances (such as with the group of Juncos) where the conclusions of some specialist, at variance with the *Check-List*, are so closely in accord with observations of the author's (in themselves perhaps insufficient to warrant outspoken disagreement), that this worker's treatment of the group is accepted in its entirety.

The expedition conducted by the California Museum of Vertebrate Zoology down the Colorado River from Needles to Yuma in the early spring of 1910, furnished much valuable information in regard to the manner of occurrence of many species of birds. An apparent inconsistency may be noticed in the citations of certain of these records, inasmuch as some of them pertaining to occurrences on the California side of the river have been quoted. Where this is done, however, it is in the case of species which are known to occur in Arizona, but where there is lack of data defining their status in this valley. In such a case, the record, though strictly speaking not pertaining to Arizona, has a very definite value in defining the status of an Arizona bird, and its use seems to be justified.

The appended bibliography contains the titles of such publications as have been consulted by the author in connection with the present contribution, the criterion for the admission of a title being that the work relate definitely to the ornithology of Arizona. Books of a general nature are not included unless they contain some definite, first-hand information on the subject, something not previously published. It is hardly to be hoped, of course, that nothing has been overlooked, and it is to be expected that additional titles relevant to the subject are still to be found, but it seems unlikely that any such will be of a nature to seriously modify many of the statements made in the following pages.

The author's personal field work in the state has been almost altogether in the region lying between the Gila River and the Mexican boundary line. Trips of varying lengths, during four different years and covering every month except December and January, included parts of this region in great detail, and larger portions in a more superficial manner. Of the three hundred and sixty-two species and sub-species here credited to the state, two hundred and twenty-seven were personally observed. In most cases specimens were collected.

The accompanying map showing life zones of the state is presented with full realization that it is probably open to criticism in many particulars, and will correspondingly doubtless require revision in many of the details. At the same time it is believed that it will be of sufficient aid in illustration of the distribution of many species, and in showing the salient zonal peculiarities of the state, to fully justify its publication, even in its admittedly tentative form. This map is compiled from various sources. The northeastern corner is copied from Merriam's (1890) zone map of the San Francisco Mountain region; the zones of much of the central portion of the state are computed from descriptions of localities in publications of Coues (1866), Henshaw (1875), Scott (1886), Mearns (1890), and others. Maps showing the distribution in Arizona of certain conspicuous forest trees useful as zone indicators, loaned to the author by the District Forester's office, Albuquerque, New Mexico, were also used, and found of great assistance. Much of the region south of the Gila River has been mapped from personal observations of the author.

## ACKNOWLEDGMENTS

In going through literature dealing with the subject it became apparent that many of the older government reports, and some more modern works as well, contained, among much trustworthy and valuable information, statements regarding certain species which needed corroborative proof other than that to be found on the printed page. This was a phase of the problem utterly beyond the author's power to deal with, unaided, and he is correspondingly grateful to Mr. W. W. Cooke of the Biological Survey, for cordial assistance in supplying definite information regarding many of these doubtful cases. Further acknowledgment is made in the following pages in each of the rather numerous instances in which his aid was invoked.

To Professor C. B. Cory and Mr. W. H. Osgood, of the Field Museum of Natural History, obligations are acknowledged for permission to print hitherto unpublished data regarding certain specimens in the ornithological collection of that institution. To Mr. F. C. Baker, of the Chicago Academy of Sciences, the author expresses his gratitude for the free use of the library of the academy accorded him, as well as for assistance and advice in the pursuit of the bibliographical portion of the work.

To Mr. G. Frean Morcom grateful thanks are extended for his generous support of, and deep interest in, field work which otherwise could hardly have been undertaken. From Mr. F. S. Daggett, now Director of the Los Angeles Museum of History, Science, and Art, the author received advice and encouragement on many occasions. Mr. Daggett added to his own collection large series of birds collected at certain localities in Arizona which the author had been unable to visit, or which were taken at different seasons of the year from the time of the author's work in the region, and the information gained thereby was freely placed at his disposal.

Mr. F. C. Willard, of Tombstone, Arizona, obligingly read the manuscript of this list, with a view of adding thereto such unpublished records of his own, obtained during a number of years of careful observation of the birds of southeastern Arizona, as would add to the statements made by the author. The valuable information thus secured is cited in the text as "F. C. Willard, MS".

Mr. A. B. Recknagel, Assistant District Forester, Albuquerque, New Mexico, very kindly loaned the author blue print maps which were on file in his office, illustrating the distribution in Arizona of seven conspicuous species of forest trees, useful as zone indicators. The data thus obtained, of the greatest value in compiling a map of the life zones of Arizona, could have been secured in no other way, and the author is deeply appreciative of the courtesy extended him.

Finally, grateful appreciation is hereby expressed for the co-operation of Mr. Joseph Grinnell, whose assistance and advice have materially aided in the completion of this list, and whose helpful suggestions throughout the course of the undertaking have strongly influenced the author, both in regard to matters of form and methods of work.

H. S. SWARTH.

*Los Angeles, California, April 1, 1913.*



## DISTRIBUTIONAL LIST OF THE BIRDS OF ARIZONA

1. ***Aechmophorus occidentalis*** (Lawrence).

WESTERN GREBE.

Synonym—*Podiceps occidentalis*.

Status—But two published records of its occurrence in Arizona. Henshaw (1875b, p. 488) secured a specimen on the Gila River in November; and Brown (1903, p. 50) reported it as a permanent resident in the vicinity of Yuma. There is, however, no evidence of its breeding there, or anywhere else in the state.

2. ***Colymbus nigricollis californicus*** (Heermann).

AMERICAN EARED GREBE.

Synonyms—*Podiceps californicus*; *Podiceps auritus californicus*.

Status—This species was found breeding by Mearns (1890a, p. 50) in the high plateau region north of the Mogollon Mountains—Storeman's Lake, Mormon Lake, and near Flagstaff. It has also been recorded from the Colorado River at Mohave, and from Moencopie, in northern Arizona, in September.

3. ***Podilymbus podiceps*** (Linnaeus).

PIED-BILLED GREBE.

Synonym—*Podilymbus carolinensis*.

Status—Apparently fairly common on the Colorado River during the migrations and in winter, while it is of only casual occurrence elsewhere. There are no definite breeding records for the state, though Brown (1903, p. 49) speaks of it as a resident in the vicinity of Yuma.

4. ***Gavia immer*** (Brünnich).

COMMON LOON.

Synonym—*Colymbus torquatus*.

Status—According to Coues (1866a, p. 100) a common winter visitant on the Colorado River. There is in the Museum of Vertebrate Zoology an adult female (no. 6403) taken (probably by W. W. Holder) at "Mineral City on the Colorado River" (=Ehrenberg), April 4, 1864.

5. ***Gavia stellata*** (Pontopiddan).

RED-THROATED LOON.

Synonym—*Urinator lumme*.

Status—There is but one record for the state, that of an immature male secured by Brown on the Papago Indian reservation, near Tucson, December 20, 1884 (Scott, 1886, p. 383).

6. ***Larus delawarensis*** Ord.

RING-BILLED GULL.

Status—Seen by Coues (1866a, p. 99) on the Colorado River "in the autumn of 1865." The only recent record known to me is that of Price (1899, p. 90), who doubtfully identified as of this species two small gulls seen near Yuma, November 27, 1898.

7. **Larus philadelphia** (Ord).

BONAPARTE GULL.

Synonym—*Chroicocephalus philadelphia*.

Status—Dr. Coues met with this species on the Gila River (1865b, p. 538), and on the Colorado River, between Forts Mohave and Yuma, in September, 1865 (1866c, p. 259), but it has not been observed in the region by any one since that time.

8. **Sterna forsteri** Nuttall.

FORSTER TERN.

Status—There is in the Museum of Vertebrate Zoology an adult male (no. 12616) taken May 4, 1910, at the mouth of the Gila River, the first definite record for Arizona. The species was included in Coues' (1866a, p. 99) list of birds occurring on the Colorado River, but with no statement as to the time or manner of its occurrence.

9. **Sterna hirundo** Linnaeus.

COMMON TERN.

Status—There is, apparently, record of but a single specimen of this species from Arizona, one secured by Henshaw (1875b, p. 486) on the San Pedro River, September 3, 1872.

10. **Hydrochelidon nigra surinamensis** (Gmelin).

BLACK TERN.

Synonyms—*Hydrochelidon fissipes*; *Hydrochelidon lariformis*; *Hydrochelidon nigra*; *Hydrochelidon surinamensis*.

Status—A rare migrant. Henshaw secured it in southern Arizona in the fall (see Henshaw, 1875b, p. 487; Saunders, 1896, p. 20), and Brewster (1883, p. 36) has recorded one taken at Cienega Station, April 17.

11. **Phaëthon aethereus** Linnaeus.

RED-BILLED TROPIC-BIRD.

Synonym—*Phaëthon americanus*.

Status—One specimen taken by Breninger at Phoenix, April 10, 1905. This bird is now in the collection of the American Museum of Natural History (cf. Miller, 1910, p. 450).

12. **Anhinga anhinga** (Linnaeus).

ANHINGA.

Status—Herbert Brown met with this species near Yuma, during the winter of 1905-06, when it appeared to be not uncommon. He also reports a single specimen, a female, killed on the Santa Cruz River, near Tucson, September 12, 1893 (1906, p. 217). These are the only records for the state.

13. **Phalacrocorax auritus albociliatus** Ridgway.

FARALLON CORMORANT.

Synonym—*Graculus dilophus*.

Status—Mentioned by Coues (1866a, p. 100) as occurring on the lower Colorado River. Seen at various points along the river between Laguna Dam and Yuma, in April and May, 1910 (Mus. Vert. Zool.).

14. **Pelecanus erythrorhynchos** Gmelin.

AMERICAN WHITE PELICAN.

Synonym—*Pelecanus trachyrhynchus*.

Status—The numerous records would indicate this species to be of common occurrence on the Colorado River, and on the lower Gila River, at all times of the year except midsummer. Except for one record from Tucson (Sloanaker, 1913, p. 195), it has apparently not been seen elsewhere in Arizona.

15. **Mergus americanus** Cassin.

AMERICAN MERGANSER.

Synonym—*Merganser americanus*.

Status—Mearns (1890a, p. 50) speaks of this species as breeding in the Mogollon Mountains, in the streams tributary to the Salt and Verde rivers, and also at Fort Verde. Scott (1886, p. 384) found it rare on the San Pedro River in January.

16. **Mergus serrator** Linnaeus.

RED-BREASTED MERGANSER.

Synonym—*Merganser serrator*.

Status—Merriam observed a few individuals at the bend of the Colorado, and at the mouth of Beaverdam Creek, northwestern Arizona, in May, 1891 (Fisher, 1893b, p. 15). This is the only published record of the occurrence of the species in Arizona. Observed on the Colorado River, near Needles, February 18, and at Chemehuevis Valley, March 8, 1910 (Mus. Vert. Zool.). Two were shot by F. N. Wolcott from a flock of four, near Fairbanks, April 8, 1911 (F. C. Willard, MS).

17. **Lophodytes cucullatus** (Linnaeus).

HOODED MERGANSER.

Status—Known only from the record by Coues (1868, p. 84) of its occurrence at Camp Grant; and by Scott (1886, p. 384) of an immature female in the collection of Herbert Brown, taken near Tucson, December 5, 1885. A lone bird was shot by F. N. Wolcott on the San Pedro River in the fall of 1896 (F. C. Willard, MS).

18. **Anas platyrhynchos** Linnaeus.

MALLARD.

Synonym—*Anas boschas*.

Status—A common winter visitant in suitable localities in southern Arizona, usually along the larger streams. Mearns found it in the Mogollon Mountains in May and June, so it probably breeds, though in limited numbers, in places where conditions are favorable.

19. **Chaulelasmus streperus** (Linnaeus).

GADWALL.

Synonym—*Anas strepera*.

Status—Mearns found this species in summer in the Mogollon Mountains, where it was common and "probably breeding". Coues (1866a, p. 99) met with it on the Colorado River in October, and Scott (1886, p. 384) took a specimen at Tucson in December.

20. **Mareca americana** (Gmelin).

BALDPATE.

Synonyms—*Anas americana*; *Anas penelope*.

Status—A common migrant, and, in southern Arizona, a winter visitant. Reported by Mearns (1890a, p. 50) as occurring in summer at Mormon Lake, in the Mogollon Mountains, where he supposed it was breeding, though no nests were found.

21. **Nettion carolinense** (Gmelin).

GREEN-WINGED TEAL.

Synonyms—*Querquedula carolinensis*; *Anas carolinensis*.

Status—A common migrant, reported from various scattered localities. Remains through the winter in southern Arizona: San Pedro River, Colorado River, Tucson, etc.

22. **Querquedula discors** (Linnaeus).

BLUE-WINGED TEAL.

Synonym—*Anas discors*.

Status—Has been reported from various parts of Arizona. Scott speaks of it as being of occasional occurrence in winter in the vicinity of Tucson, while Mearns (1890a, p. 51) found the species in May and June on the lakes of the Mogollon Mountains, where it may have been breeding. There are also records of individuals taken during the migrations at Tucson, Ehrenberg (Colorado River), Sulphur Spring (Cochise County), and San Francisco Mountain. Not infrequently taken in winter on the San Pedro River (F. C. Willard, MS).

23. **Querquedula cyanoptera** (Vieillot).

CINNAMON TEAL.

Synonyms—*Pterocyanca caeruleata*; *Anas cyanoptera*.

Status—A common migrant throughout the state. Has been found breeding in the Mogollon Mountains, and is reported as a winter visitant in extreme southern Arizona (Tucson, Sulphur Spring, etc.).

24. **Spatula clypeata** (Linnaeus).

SHOVELLER.

Status—A migrant, and, in southern Arizona, a winter visitant. Mearns (1890a, p. 51) found the species in May and June on the lakes in the Mogollon Mountains, where it may have been breeding.

25. ***Dafila acuta*** (Linnaeus).  
PINTAIL.

Status—Has been reported as a migrant from various parts of the state. It was found on Mormon Lake, in the Mogollon Mountains, in May, by Mearns. Seen on the San Pedro River in February, so is probably a winter visitant in southern Arizona (Willard, 1910c, p. 110).

26. ***Marila americana*** (Eyton).  
REDHEAD.

Synonym—*Aythya americana*.

Status—The only record of the occurrence of this species in Arizona is that by Scott (1886, p. 384), who reported it as occurring in winter in the vicinity of Tucson and on the San Pedro River.

27. ***Marila valisineria*** (Wilson).  
CANVAS-BACK.

Synonym—*Aythya vallisneria*.

Status—Scott (1886, p. 384) records a small flock seen on the San Pedro River, January 28, 1886, while Coues (1892a, p. 198) reports it as occurring in large numbers on the Verde River near Fort Whipple, in winter. These are the only records for the state.

28. ***Marila marila*** (Linnaeus).  
GREATER SCAUP DUCK.

Synonym—*Aythya marila nearctica*.

Status—Known only from the record by Scott (1886, p. 384), who speaks of it as "rather common on the San Pedro in winter."

29. ***Marila affinis*** (Eyton).  
LESSER SCAUP DUCK.

Synonym—*Aythya affinis*.

Status—A record by Scott (1886, p. 384) of "a few seen on the San Pedro during late January." Common near Tucson in March, 1912 (Sloanaker, 1913, p. 195). Observed on the Colorado River, near Ehrenberg, March 24, and at Cibola, April 4, 1910 (Mus. Vert. Zool.).

30. ***Clangula clangula americana*** Bonaparte.  
AMERICAN GOLDEN-EYE.

Status—Only one record, that of two specimens taken near Tucson, April 1 and February 1, respectively (Sloanaker, 1912, p. 154).

31. ***Charitonetta albeola*** (Linnaeus).  
BUFFLE-HEAD.

Synonyms—*Clangula albeola*; *Bucephala albeola*.

Status—While apparently not common, this species has been reported in winter from various scattered localities in all parts of the state (Tucson, San Pedro River, Bill Williams River, etc.).

32. ***Erismatura jamaicensis* (Gmelin).**

RUDDY DUCK.

Synonym—*Erismatura rubida*.

Status—Though there are curiously few published records of the occurrence of this species, it is, nevertheless, a fairly common migrant. Mearns met with it in summer in the Mogollon Mountains (Stoneman's Lake, Moimon Lake), and near Flagstaff, where they were preparing to breed. It very probably remains through the winter in southern Arizona, though there are no records of its doing so. Observed near Tucson in April, 1896 (Swarth MS), and on the Colorado River, near Laguna Dam, April 23, 1910 (Mus. Vert. Zool.).

33. ***Chen hyperboreus hyperboreus* (Pallas).**

LESSER SNOW GOOSE.

Synonym—*Anser hyperboreus*.

Status—There is a record by Coues (1866a, p. 98) of "specimens taken near Fort Whipple, Oct. 17, 1864." Seen on the Colorado River, near Needles, February 16 and 23, 1910 (Mus. Vert. Zool.).

34. ***Anser albifrons gambeli* Hartlaub.**

WHITE-FRONTED GOOSE.

Synonyms—*Anser albifrons*; *Anser gambeli*.

Status—Coues (1866a, p. 98) found it abundant on the Colorado River. There is no published statement of its occurrence in the region since that time.

35. ***Branta canadensis canadensis* (Linnaeus).**

CANADA GOOSE.

Synonym—*Bernicla canadensis*.

Status—The species has been reported both from the Colorado River, and from the San Pedro River, in winter, but from the paucity of records it would seem to be of uncommon occurrence.

36. ***Branta canadensis hutchinsi* (Richardson).**

HUTCHINS GOOSE.

Synonym—*Bernicla hutchinsi*.

Status—The only records for Arizona are those by Coues of its occurrence on the Colorado River (1866a, p. 98), and at Fort Grant (1868, p. 84).

37. ***Dendrocygna autumnalis* (Linnaeus).**

BLACK-BELLIED TREE-DUCK.

Status—Herbert Brown (1906, p. 217) has reported the killing of six specimens of this duck, out of a flock of eight, on the Santa Cruz River, near Tucson, on May 5, 1899. This is the only Arizona record.

38. **Dendrocygna bicolor** (Vieillot).

FULVOUS TREE-DUCK.

Synonym—*Dendrocygna fulva*.

Status—Coues (1866a, p. 98) has recorded the capture of "a pair taken in November, about twenty miles from Fort Whipple." From a published note of Brown (1906, p. 217) it would seem to be of fairly common occurrence in winter on the Colorado and Gila rivers, in the vicinity of Yuma, and decidedly rare elsewhere in the state.

39. **Olor columbianus** (Ord).

WHISTLING SWAN.

Synonym—*Cygnus americanus*.

Status—Recorded by Coues (1866a, p. 98) from the Colorado River and Fort Mohave. There is a recent instance of its occurrence at Sacaton, Pinal County, November 21, 1910 (Gilman, 1911a, p. 35).

40. **Plegadis guarauna** (Linnaeus).

WHITE-FACED GLOSSY IBIS.

Synonyms—*Ibis ordii*; *Falcinellus ordii*; *Ibis guarauna*; *Ibis thalassinus*; *Plegadis autumnalis*.

Status—Apparently fairly abundant, as there are records of its occurrence during the migration in various parts of the state: Tucson, Little Colorado River, Forts Whipple and Apache, and at various points along the Gila and Colorado rivers. It has been reported as breeding at Mormon Lake, in the Mogollon Mountains (Merriam, 1890, p. 88). Has been found at Tombstone in winter (Cooke, 1913, p. 21).

41. **Mycteria americana** Linnaeus.

WOOD IBIS.

Synonym—*Tantalus loculator*.

Status—Apparently common, during the summer months, from May to September, along the Colorado River, at least as far up as Fort Mohave (Coues, 1866a, p. 96). There are also records for the various tributaries of that stream: the Gila, San Pedro, Bill Williams, etc. It is not known to breed in Arizona, nor has it been observed in winter.

42. **Botaurus lentiginosus** (Montagu).

AMERICAN BITTERN.

Synonym—*Botaurus minor*.

Status—The only breeding record is that of Mearns (1890a, p. 51) who found the species nesting commonly in the Mogollon Mountains (Mormon Lake, etc.). It is a fairly common migrant elsewhere and has been found in winter on the San Pedro River in southern Arizona (Scott, 1886, p. 385).

43. ***Ixobrychus exilis* (Gmelin).**

LEAST BITTERN.

Synonym—*Ardetta exilis*.

Status—Coues (1866a, p. 263) noted this species along the Colorado River between Forts Yuma and Mohave, in September, 1865. This is the only record for the state.

44. ***Ardea herodias treganzai* Court.**

PALLID GREAT BLUE HERON.

Synonym—*Ardea herodias*.

Status—Breeds along the Colorado River, and in southern Arizona, along the Gila River and its tributaries (Mineral Creek, San Pedro River, etc.). Found also in winter in the same region. There appear to be no records whatever from the plateau region of northern Arizona.

45. ***Herodias egretta* (Gmelin).**

AMERICAN EGRET.

Synonyms—*Ardea egretta*; *Herodias alba egretta*.

Status—Probably a migrant only; there are records of its occurrence in April, May, and September, at various points on the Colorado, Gila, and San Pedro rivers.

46. ***Egretta candidissima candidissima* (Gmelin).**

SNOWY HERON.

Synonyms—*Garzetta candidissima*; *Ardea candidissima*.

Status—There are but two instances of the occurrence of this species in Arizona: Coues (1866a, p. 263) observed it on the Colorado River between Forts Mohave and Yuma in September, and Scott (1886, p. 385) reports a flock of five seen, one of which was secured, near Tucson, in May.

47. ***Butorides virescens anthonyi* (Mearns).**

ANTHONY GREEN HERON.

Synonyms—*Butorides virescens*; *Ardea virescens*; *Ardea virescens anthonyi*.

Status—The breeding range of this species appears to be about the same as that of the Great Blue Heron—along the Colorado River, the Gila River, and the tributaries of the latter, north to the Big Sandy and Fort Verde (Oberholser, 1912, p. 543); while it is reported in winter from the lower Colorado near Yuma, November or December, 1898 (Price, 1899, p. 91). Thus far it has not been found in the northern plateau region.

48. ***Nycticorax nycticorax naevius* (Boddaert).**

BLACK-CROWNED NIGHT HERON.

Synonyms—*Nyctiardea gardeni*; *Nyctiardea grisea naevia*.

Status—A common migrant, occurring in suitable localities throughout the region. Remains through the winter along the lower Colorado River, and probably in the warmer valleys of southern Arizona in general. Said to be a permanent resident in the Verde Valley (Mearns, 1890a, p. 51).

49. ***Grus canadensis* (Linnaeus).**

## LITTLE BROWN CRANE.

Synonym—*Grus mexicana*, part?

Status—There are several records of the occurrence of this species at various points along the Colorado River as well as in the interior, during the migrations and in winter. Some, at least, of these probably refer to *G. mexicana*, but in the absence of specimens it is impossible to separate them. A late record, authenticated by specimens, is of two birds taken near Tucson (Sloanaker, 1912, p. 154).

50. ***Grus mexicana* (Müller).**

## SANDHILL CRANE.

Synonym—*Grus canadensis*, part?

Status—"A few pairs breed at Mormon Lake, where a Mormon settler took its eggs in 1886" (Mearns, 1890a, p. 51). This record for the Mogollon Mountains appears to be the only definite one for the state. A few are reported as seen along the San Pedro River each winter (F. C. Willard, MS).

51. ***Rallus levipes* Bangs.**

## LIGHT-FOOTED RAIL.

Status—"Accidental in Arizona" (A. O. U. *Check-List*, 1910, p. 102). According to information received by me from Mr. W. W. Cooke this record was based on a specimen taken August 25, 1902, by Mr. Herbert Brown, at Yuma.

52. ***Rallus virginianus* Linnaeus.**

## VIRGINIA RAIL.

Status—The only Arizona records of the Virginia Rail are of a single bird seen on the San Pedro River, January 28, 1886, by Scott (1886, p. 385), and of one taken at Tucson, April 11, 1886, by Brown (Allen, 1886, p. 386, footnote). It should prove to be common, however, if sought for in suitable localities.

53. ***Porzana carolina* (Linnaeus).**

## SORA.

Status—Mearns (1890a, p. 51) found this species in the Mogollon Mountains (Mormon Lake, Stoneman's Lake) in May, abundant and probably breeding. Aside from this it has been found in Arizona on but a few occasions, during the migrations and in scattered localities (Colorado River, Camp Apache, Tucson, Moencopie).

54. ***Coturnicops noveboracensis* (Gmelin).**

## YELLOW RAIL.

Status—One specimen reported from Sacaton, March 28, 1909 (Gilman, 1910, p. 46). Not otherwise observed in Arizona.

55. ***Ionornis martinicus* (Linnaeus).**

## PURPLE GALLINULE.

Status—Two specimens have been secured in Arizona: one on the Santa Cruz River, near Tucson, October 20, 1887 (Brown, 1888a, p. 109), the other at Tombstone, taken in June, 1904 (Willard, 1905, p. 112).

56. **Gallinula galeata** (Lichtenstein).

## FLORIDA GALLINULE.

Status—This species is probably fairly common, at least during the migrations, though there are but very few published statements in regard to its occurrence. Scott (1886, p. 386) found it on the San Pedro River in January, and quotes Brown to the effect that it is "not uncommon about Tucson." Rhoads (1892, p. 113) also found it in the vicinity of Tucson in summer.

57. **Fulica americana** Gmelin.

## AMERICAN COOT.

Status—Though a few have been noted at different times in southern Arizona during the summer months, the only part of the state where the species has been found breeding is on the high Mogollon Plateau (Mearns, 1890a, p. 52). During the migrations it is quite generally distributed, while it winters in southern Arizona.

58. **Lobipes lobatus** (Linnaeus).

## NORTHERN PHALAROPE.

Synonym—*Phalaropus lobatus*.

Status—"A flock of eight, six of which were killed, was found in a little crater lake ('Walker Lake'), August 19" (Merriam, 1890, p. 88). This record from San Francisco Mountain is the only one for Arizona.

59. **Steganopus tricolor** Vieillot.

## WILSON PHALAROPE.

Synonyms—*Phalaropus wilsoni*; *Steganopus wilsoni*.

Status—Found on the Colorado River in September by Coues (1866a, p. 263), in southeastern Arizona by Henshaw (1875b, p. 451), who found it common in August, and at Tucson, where Scott (1886, p. 386) found it "common during the migrations."

60. **Recurvirostra americana** Gmelin.

## AMERICAN AVOCET.

Status—Has been noted during the fall migration at various points on the Colorado River, the Little Colorado, the Gila, and in the vicinity of Tucson. There is a specimen in the Museum of Vertebrate Zoology (no. 7069) taken, probably by W. W. Holder, at "Mineral City" (Ehrenberg), February 12, 1864.

61. **Himantopus mexicanus** (Müller).

## BLACK-NECKED STILT.

Synonym—*Himantopus nigricollis*.

Status—Recorded only from points on the Colorado River, where Coues (1866a, p. 263) met with it in September, and Stephens (1903, p. 77) in August. It should occur during the migrations throughout southern Arizona at least.

62. **Gallinago delicata** (Ord).

## WILSON SNIFE.

Synonyms—*Scolopax wilsonii*; *Gallinago wilsonii*.

Status—A migrant occurring throughout the state. Was found on Bill Williams Fork in February (Kennerly, 1859, p. 34), and is of occasional occurrence in winter in southern Arizona.

63. **Macrorhamphus griseus scolopaceus** (Say).

## LONG-BILLED DOWITCHER.

Synonym—*Macrorhamphus griseus*.

Status—There is but little information at hand pertaining to the occurrence of this species in Arizona. Coues (1866a, p. 97) speaks of it as being "sparingly distributed throughout the Territory", without citing any specific instances of its capture. Henshaw (1875b, p. 453) lists a specimen from Mimbres, Arizona, October 22, and comments that the species is "apparently an uncommon visitor in Arizona." A specimen entered in the British Museum Catalogue of Birds (Sharpe, 1896, p. 399): "♀ ad., Arizona, Oct. 22, C. G. Newberry", is probably the same one alluded to by Henshaw.

These are all referred to as *Macrorhamphus griseus*, but it seems more probable that the form occurring in Arizona is *M. g. scolapaceus*. I have seen no specimens from the region.

64. **Pisobia bairdi** (Coues).

## BAIRD SANDPIPER.

Synonyms—*Tringa schinzii*; *Actodromas bairdi*; *Tringa bairdi*.

Status—Henshaw (1875b, p. 455) found it quite numerous in the fall in southeastern Arizona, taking specimens at Camp Apache, August 26-29, and at Camp Crittenden, September 2. Merriam (1890, p. 88) met with it at Walker Lake, San Francisco Mountain, August 27 and September 1. Not reported from the Colorado River.

65. **Pisobia minutilla** (Vieillot).

## LEAST SANDPIPER.

Synonyms—*Actodromas minutilla*; *Tringa minutilla*; *Limonites minutilla*.

Status—A common migrant throughout the state. It is probably a winter visitant in parts of southern Arizona and along the lower Colorado River, but the only definite record of a winter bird is of a specimen mentioned by Cooke (1910, p. 41), as in the United States National Museum, collected in winter in southern Arizona, no definite date or locality being given.

66. **Pelidna alpina sakhalina** (Vieillot).

## RED-BACKED SANDPIPER.

Synonym—*Tringa alpina pacifica*.

Status—Recorded by Scott (1886, p. 386), who secured specimens near Tucson in April, 1883. Apparently not otherwise observed in Arizona.

67. **Ereunetes mauri** Cabanis.

## WESTERN SANDPIPER.

Synonyms—*Tringa pusilla*; *Ereunetes pusillus*; *Ereunetes occidentalis*.

Status—A common migrant throughout the state: Fort Apache, August 28, 29 (Henshaw, 1874, p. 145); Tucson, spring and fall (Scott, 1886, p. 386); San Francisco Mountain, September 1 (Merriam, 1890, p. 88). On the lower Colorado River at least, a winter visitant (Price, 1899, p. 91).

68. **Totanus melanoleucus** (Gmelin).

## GREATER YELLOW-LEGS.

Synonym—*Gambetta melanoleuca*.

Status—Has been observed in Arizona on but a few occasions, and at scattered localities. Coues (1866a, p. 98) states that it is "abundant on the Colorado." Reported from Bill Williams River in February (Kennerly, 1859, p. 34); from Tucson in October (Scott, 1886, p. 386); and from the Pima Indian Reservation, south of Phoenix, in September (Breninger, 1901a, p. 45).

69. **Helodromas solitarius cinnamomeus** (Brewster).

## WESTERN SOLITARY SANDPIPER.

Synonyms—*Rhyacophilus solitarius*; *Totanus solitarius*; *Helodromas solitarius*.

Status—An abundant migrant in suitable localities throughout the state.

70. **Catoptrophorus semipalmatus inornatus** (Brewster).

## WESTERN WILLET.

Synonyms—*Totanus semipalmatus*; *Symphemia semipalmata*.

Status—The only records for Arizona (beside the general statement of Woodhouse that he found this species abundant in the fall in "New Mexico") are those of birds seen by Coues (1866a, p. 97) near Fort Whipple, on October 18, 1864; and of one collected in "Arizona" by Bischoff, May 5, 1871 (Henshaw, 1875b, p. 457).

71. **Bartramia longicauda** (Bechstein).

## BARTRAMIAN SANDPIPER.

Synonyms—*Actiturus bartramius*; *Tringoides bartramius*.

Status—Woodhouse reported this species as common in parts of "New Mexico", but the only specimen definitely known to have been taken in Arizona is one collected by Henshaw (1875b, p. 461) at Sulphur Spring, Cochise County, August 18, 1874.

72. **Actitis macularius** (Linnaeus).

## SPOTTED SANDPIPER.

Synonym—*Tringoides macularius*.

Status—A common migrant throughout the state, and probably to be found on the lower Colorado River during the winter months. Found breeding on San Francisco Mountain at an elevation of 10,000 feet (Mearns, 1890a, p. 82).

73. ***Numenius americanus* Bechstein.**

## LONG-BILLED CURLEW.

Synonym—*Numenius longirostris*.

Status—Coues (1866a, p. 98) secured a specimen at Fort Whipple in August, 1864; Scott (1886, p. 386) recorded it as a migrant about Tucson, on the authority of Brown; Sloanaker (1913, p. 195) reports a specimen from Tucson, October 12, 1911; and Stephens (1903, p. 77) noted it on the Colorado River, at Ehrenberg, in August. These are all the records for Arizona.

74. ***Oxyechus vociferus* (Linnaeus).**

## KILLDEER.

Synonyms—*Charadrius vociferus*; *Aegialitis vociferus*.

Status—A common summer visitant, and, along the lower Colorado River at least, a winter visitant also. Breeds in suitable localities throughout the state, except in the arid Lower Sonoran southwestern portion. Common in summer in the valleys of southeastern Arizona; in the Mogollon Plateau region it ranges up to 7000 feet (Mearns, 1890a, p. 52).

75. ***Aegialitis semipalmata* (Bonaparte).**

## SEMIPALMATED PLOVER.

Status—Seen by Coues (1866a, p. 96) on the Colorado River in September and October, 1865; Scott (1886, p. 387) found it abundant in the vicinity of Tucson, during April, 1883. These are the only records.

76. ***Podasocys montanus* (Townsend).**

## MOUNTAIN PLOVER.

Synonyms—*Aegialitis montanus*; *Eudromias montanus*.

Status—Coues (1866a, p. 96) met with this species, presumably at Fort Whipple, and says that it is "sparingly distributed throughout Arizona." The only other record from Arizona is that of Osgood (1903, p. 128), who found it abundant at Sulphur Spring, Cochise County, in December and January.

77. ***Colinus ridgwayi* Brewster.**

## MASKED BOB-WHITE.

Synonyms—*Ortyx virginianus*; *Ortyx graysoni*; *Ortyx ridgwayi*.

Status—This species formerly occupied a very limited region in extreme southern Arizona. Baboquivari Peak on the west, and the Huachuca Mountains on the east, were about the limits of its extension, nor was it known to range more than thirty or forty miles north of the United States-Mexican boundary line. It is now supposed to be nearly or quite extinct in Arizona; there is no reliable published account of a specimen secured in the state since 1888.

78. ***Callipepla squamata squamata* (Vigors).**

## SCALED QUAIL.

Status—A common resident of the arid, semi-desert, Lower Sonoran valleys of southeastern Arizona, usually below 4000 feet, occasionally up to 4500 feet. Has been found as far west as the Altar Valley and Wood's Station, ninety

miles southwest of Tucson (Bendire, 1892, p. 18). It ranges up the valley of the Santa Cruz River to a point some thirty miles south of Tucson; along the western base of the Santa Rita Mountains it reaches a little farther north. It is abundant on the east side of the Santa Ritas and in the valley of the San Pedro River from the Mexican boundary line to the east slope of the Santa Catalina Mountains. The northernmost points of record are Fort Grant (Henshaw, 1875b, p. 442), Picacho Station, on the Southern Pacific railroad, this probably an extreme, possibly an unusual, extension of range (Brewster, 1883, p. 33), and the Gila River near Clifton (Bendire, 1892, p. 18).

Although the character of country inhabited by this species and *Lophortyx gambeli* is very similar, there are but few points where the two occur together, and where this occurs one or the other is usually greatly in preponderance.

79. ***Lophortyx gambeli* Gambel.**

DESERT QUAIL.

Synonyms—*Callipepla gambeli*; *Lophortyx californicus*.

Status—Though most abundant in the valleys of the lower Colorado and the Gila rivers, this species is quite generally distributed, in the lowlands, throughout the southern and western two-thirds of the state. It is not known to occur in the northern plateau region, north of Fort Apache and the Mogollon Mountains and east of Bill Williams Mountain and Cataract Cañon; and until recently it was very rare in the extreme southeastern corner of the state, the southern half of Cochise County. Of late years has become much more common in the vicinity of Tombstone and the Dragoon Mountains. Occurs in the latter range up to 5000 feet (F. C. Willard, MS).

80. ***Cyrtonyx montezumae mearnsi* Nelson.**

MEARNS QUAIL.

Synonyms—*Cyrtonyx massena*; *Cyrtonyx montezumae*; *Fool Quail*.

Status—Found in the Upper Sonoran and Transition of central and southeastern Arizona. It has been recorded from the following mountain ranges: Chiricahua, Huachuca, Carmelita, Patagonia, Santa Rita, Whetstone, Rincon, Santa Catalina, Pinal, White and Mogollon mountains. The most northern and western record is from the vicinity of Fort Whipple. The range is thus very "spotty" and broken, the intervening valleys between the various ranges being, for the most part, entirely unsuited to the species. The vertical range is from 4000 to 9000 feet.

81. ***Dendragapus obscurus obscurus* (Say).**

DUSKY GROUSE.

Synonym—*Canace obscurus*.

Status—Common in the White Mountains (Mearns, 1890a, p. 52). There is a record of a single bird seen on San Francisco Mountain (Merriam, 1890, p. 89).

82. ***Meleagris gallopavo merriami* Nelson.**

MERRIAM TURKEY.

Synonyms—*Meleagris gallopavo*; *Meleagris mexicana*.

Status—This species was probably at one time pretty generally distributed throughout the state, south of the Grand Cañon of the Colorado and the Little Colorado River, reaching its western limit, in southern Arizona about the valley of the Santa Cruz, in the north, about the head of Bill Williams River. Now driven back to the most remote mountain ranges, and even in many such, nearly or quite exterminated.

83. ***Columba fasciata fasciata* Say.**

BAND-TAILED PIGEON.

Status—A common summer visitant in suitable localities throughout the state; that is, in the higher mountain ranges, breeding usually above 6000 feet. Has been found in summer on San Francisco Mountain, Mount Graham, and the White, Mogollon, Santa Catalina, Huachuca, and Carmelita mountains. Is locally migratory, but probably to be found somewhere in the state at all times of the year. I know of no definite midwinter records.

84. ***Zenaidura macroura marginella* (Woodhouse).**

WESTERN MOURNING DOVE.

Synonyms—*Ectopistes carolinensis*; *Zenaidura carolinensis*; *Zenaidura macroura*; *Zenaidura macroura carolinensis*.

Status—A common summer visitant throughout the state, occurring in places in almost incredible numbers. In the valley of the lower Colorado River, and locally in southern Arizona, it is found throughout the winter.

85. ***Melopelia asiatica trudeani* (Audubon).**

WHITE-WINGED DOVE.

Synonyms—*Columba leucoptera*; *Melopelia leucoptera*; *Melopelia asiatica*.

Status—A common summer visitant, locally, in southern and western Arizona. Its range in the state seems to be restricted to the valleys of the lower Colorado and Gila rivers, and the tributaries of the latter (San Pedro, Santa Cruz, Verde, and Salt rivers), in which it ranges up to about 4000 feet. Extends at least as far north as Needles (Stephens, 1903, p. 77), and Fort Whipple (Coues, 1866a, p. 93). Seen in small numbers at Tucson throughout the winter (Bendire, 1892, p. 146).

86. ***Chaemepelia passerina palleescens* Baird.**

MEXICAN GROUND DOVE.

Synonyms—*Chamaepelia passerina*; *Columbigallina passerina*.

Status—Locally common in southern Arizona, ascending the valley of the Colorado as far north as the Big Sandy (Stephens, 1903, p. 77), in the interior to Fort Verde (Todd, 1913, p. 594). It is partly migratory but stays through the winter in parts of its range. Specimens in the collection of F. S. Daggett taken at Fort Lowell in November and December. According to Gilman (1911b, p. 54) it is a summer visitant only at Sacaton.

87. **Scardafella inca** (Lesson).

## INCA DOVE.

Status—Exceedingly local, and recorded from very few points—Tucson, Phoenix, Florence, Tubac (in the Santa Cruz Valley), and the Huachuca Mountains. It particularly favors the towns and settlements, a trait shared to some extent by the Mexican Ground Dove, and is probably more abundant in the vicinity of Phoenix than anywhere else in the state. Reported as a permanent resident at Sacaton, Pinal County (Gilman, 1911b, p. 55).

88. **Cathartes aura septentrionalis** Wied.

## TURKEY VULTURE.

Synonyms—*Cathartes aura*; *Rhinogryphus aura*.

Status—A common summer visitant throughout the state; reported from many scattered localities, generally below 6000 feet: Fort Whipple, summer; Santa Catalina Mountains, resident; San Francisco and Mogollon mountains, summer; Kean Cañon, summer; Huachuca Mountains, summer; Santa Rita Mountains, summer. Breeding on the east slope of the Santa Catalina Mountains, in the Dragoon Mountains, and in the Huachuca Mountains (F. C. Willard, MS). It remains during the winter in parts of southern Arizona.

89. **Circus hudsonius** (Linnaeus).

## MARSH HAWK.

Synonyms—*Circus cyaneus*; *Circus cyaneus* var. *hudsonius*.

Status—An abundant migrant, and, in southern Arizona at least, a common winter visitant (Scott, 1886, p. 422; San Pedro River, January). Found breeding near Tucson by Bendire (1892, p. 185).

90. **Accipiter velox** (Wilson).

## SHARP-SHINNED HAWK.

Synonyms—*Accipiter fuscus*; *Nisus fuscus*; *Accipiter velox rufilatus*; *Accipiter velox pacificus*.

Status—Probably breeds in small numbers in the higher mountains throughout the state, but though observed during the summer months there are no definite published statements of its breeding anywhere in Arizona. Found nesting in the Huachuca Mountains, a set of eggs being taken in Miller Cañon, at an altitude of 6800 feet, May 30, 1907 (F. C. Willard, MS). It is a very common migrant throughout the state, and has been seen in southern Arizona during the winter, at the San Pedro River in January (Scott, 1886, p. 422), and at Sulphur Spring, Cochise County, in November (Osgood, 1903, p. 129).

91. **Accipiter cooperi** (Bonaparte).

## COOPER HAWK.

Synonyms—*Accipiter mexicanus*; *Nisus cooperi*.

Status—A very common resident, breeding in suitable localities throughout

the state, in Lower and Upper Sonoran, and to at least the lower edge of Transition. There are breeding records from Picacho, Colorado River (Mus. Vert. Zool.); Santa Cruz River near Tucson (Swarth, 1905a, p. 25); Huachuca Mountains (Swarth, 1904b, p. 6); Santa Rita Mountains (Brewster, 1883, p. 30); Santa Catalina Mountains (Scott, 1886, p. 422); and Fort Grant (Coues, 1868, p. 82). It remains locally through the winter.

92. ***Astur atricapillus atricapillus* (Wilson).**

AMERICAN GOSHAWK.

Synonyms—*Accipiter atricapillus*; *Accipiter atricapillus striatulus*.

Status—There are very few records of the occurrence of this species in Arizona: On San Francisco Mountain, where several were seen (Merriam, 1890, p. 90); a few individuals in the Mogollons in May and on San Francisco Mountain in June (Mearns, 1890a, p. 53); and in the Huachuca Mountains, where it is a rare migrant (Swarth, 1904b, p. 6).

93. ***Parabuteo unicinctus harrisi* (Audubon).**

HARRIS HAWK.

Synonyms—*Morphnus unicinctus*; *Craxirex unicinctus*; *Craxirex harrisii*.

Status—Recorded from the Colorado River in February (Kennerly, 1859, p. 20), and at Ehrenberg in August (Stephens, 1903, p. 77). It ranges across southern Arizona, and has been found breeding in the vicinity of Tucson (Bendire, 1892, p. 202), and at the east base of the Huachuca Mountains, where a set of eggs was collected June 1, 1907 (F. C. Willard, MS). Seen on the San Pedro River, in extreme southeastern Arizona, in February (Willard, 1910c, p. 110).

94. ***Buteo borealis calurus* Cassin.**

WESTERN RED-TAILED HAWK.

Synonyms—*Buteo borealis*; *Buteo calurus*; *Buteo montanus*.

Status—An abundant resident, found in all parts of the state. Breeds from Lower Sonoran up through Transition, exact points of record being Rillito Creek near Tucson, Camp Crittenden, Santa Catalina Mountains, and the pine belt of the Mogollon Mountains.

95. ***Buteo abbreviatus* Cabanis.**

ZONE-TAILED HAWK.

Synonym—*Buteo zonocercus*.

Status—Generally distributed throughout southern Arizona. Recorded from many localities (Colorado River, Santa Cruz Valley, Rincon Mountains, etc.) north to the Verde Valley, Prescott, and the Big Sandy. Numerous breeding records, mostly in the Upper Sonoran zone: Tucson (Brewster, 1883, p. 30); New River (Mearns, 1886a, p. 60); Huachuca Mountains (Bendire, 1887, p. 551); Rincon Mountains (Brown, 1901, p. 392); east slope of Santa Catalina Mountains (F. C. Willard, MS). Except along the lower Colorado it seems to go south of Arizona in the winter. Seen at Yuma in winter (Price, 1899, p. 91).

96. **Buteo swainsoni** Bonaparte.

SWAINSON HAWK.

Synonyms—*Buteo bairdi*; *Buteo insignatus*; *Buteo oxypterus*.

Status—An abundant summer visitant on the plains in extreme southeastern Arizona (Tucson, Fort Grant, Fort Huachuca, etc.); also found breeding near Yuma (Brown, 1903, p. 44). During the migrations it is more widely distributed. Has not been observed in Arizona during the winter months.

97. **Buteo albicaudatus sennetti** Allen.

SENNETT WHITE-TAILED HAWK.

Status—A nest found by G. F. Breninger between Florence and Red Rock in 1897, and a male bird taken by the same collector at Phoenix in the spring of 1899 (1899c, p. 352). Not otherwise observed in Arizona.

98. **Urubitinga anthracina** (Lichtenstein).

MEXICAN BLACK HAWK.

Status—The only breeding record is from the vicinity of Fort Verde, in central Arizona (Mearns, 1886a, p. 60). Other points at which the species has been observed are Forts Bowie, Lowell, and Huachuca. Its occurrence at Fort Bowie in February (Fowler, 1903, p. 70) indicates that it remains throughout the year in some parts at least of southern Arizona.

99. **Asturina plagiata** Schlegel.

MEXICAN GOSHAWK.

Synonyms—*Asturina nitida*; *Asturina nitida plagiata*.

Status—The center of its abundance in Arizona seems to be the valley of the Santa Cruz River, where it is not uncommon during the summer months. It has also been found breeding on Rillito Creek (a tributary of the Santa Cruz), in the foothills of the Santa Rita Mountains, on the San Pedro River, and, the westernmost record, on the Gila River in the vicinity of Gila Bend (Pember, 1892, p. 53).

100. **Archibuteo lagopus sancti-johannis** (Gmelin).

AMERICAN ROUGH-LEGGED HAWK.

Synonym—*Archibuteo lagopus*.

Status—A specimen taken by Coues (1866a, p. 48) at Fort Whipple in the winter of 1865. Henshaw (1875a, pp. 163, 164) cites Bendire as having met with the species at Tucson in winter.

101. **Archibuteo ferrugineus** (Lichtenstein).

FERRUGINOUS ROUGH-LEGGED HAWK.

Status—Coues (1866a, p. 46) found this species abundant in winter in the vicinity of Fort Whipple. Fisher (1893a, p. 91) records a specimen taken at Fort Verde in December. The few other Arizona records are either of doubtfully identified birds, or else are not explicit statements of the place or manner of occurrence. It has not been found breeding in Arizona.

102. ***Aquila chrysaëtos* (Linnaeus).**

## GOLDEN EAGLE.

Synonyms—*Aquila canadensis*; *Aquila chrysaetus* var. *canadensis*.

Status—A fairly common resident of the higher mountain ranges in northern Arizona, and in the eastern part of the state south to the Mexican boundary line. Found breeding at Prescott (Coues, 1892b, p. 201); reported as resident in the Santa Catalina Mountains (Scott, 1886, p. 423), and in the Huachuca Mountains (Swarth, 1904b, p. 7); an old nest seen in the latter range (Swarth MS). Recorded from various other scattered localities: in summer, San Francisco Mountain, Santa Catalina Mountains, Kearn Cañon, etc.; in fall and winter, Grand Cañon, Fort Whipple, Huachuca Mountains, etc. Not observed anywhere in the western deserts.

103. ***Haliaeetus leucocephalus leucocephalus* (Linnaeus).**

## BALD EAGLE.

Status—Reported by Mearns (1890a, p. 53) as breeding at Stoneman's Lake, in the Mogollon Mountains. Coues met with it at Fort Whipple, and Henshaw at Fort Apache in southeastern Arizona; a specimen is listed by Fisher (1893a, p. 97) as collected in the Mogollon Mountains in January.

104. ***Falco mexicanus* Schlegel.**

## PRAIRIE FALCON.

Synonyms—*Falco polyagrus*; *Falco lanarius* var. *polyagrus*; *Falco saker* var. *polyagrus*.

Status—Fairly common resident throughout the state; reported from many different points, winter and summer. Found breeding on San Francisco Mountain (Merriam, 1890, p. 90), and in the Huachuca Mountains (Howard, 1902, p. 57), and an occupied nesting site observed on the Colorado River near the mouth of Bill Williams River in the spring of 1910 (Mus. Vert. Zool.).

105. ***Falco peregrinus anatum* Bonaparte.**

## DUCK HAWK.

Synonyms—*Falco anatum*; *Falco nigriceps*; *Falco communis* var. *anatum*.

Status—Resident and apparently common in the mountains of central Arizona (Mearns, 1890a, p. 54). In the more southern parts of the state it is a rather uncommon migrant.

106. ***Falco columbarius columbarius* Linnaeus.**

## PIGEON HAWK.

Synonym—*Hypotriorchis columbarius*.

Status—I know of no instance of this species breeding in Arizona. It occurs as a fairly common migrant, and, in some localities, possibly as a winter visitant.

107. **Falco columbarius richardsoni** Ridgway.

RICHARDSON MERLIN.

Synonyms—*Falco richardsoni*; *Falco acaulon*.

Status—Cooper secured an adult female at Fort Mohave, January 21, 1861 (Mus. Vert. Zool., no. 4388), and Fisher (1893a, p. 114) lists one collected at Fort Verde, December 9, 1887, the only definite records I know of for Arizona. Coues' (1866a, p. 42) comments on *Falco acaulon* undoubtedly refer to this species, but give no clue as to its status in the region he explored.

108. **Falco fusco-caerulescens** Vieillot.

APLOMADO FALCON.

Synonyms—*Falco femoralis*; *Hypotriorchis femoralis*.

Status—Formerly, at least, a fairly common summer visitant in extreme southeastern Arizona. Henshaw (1875b, p. 413) observed it in this region in 1874, and Bendire (1887, p. 552) describes its nesting near Fort Huachuca. Has been met with but seldom of late years. One seen on the San Pedro River, near Fairbanks, February 13, 1910 (Willard, 1910c, p. 110).

109. **Falco sparverius sparverius** Linnaeus.

AMERICAN SPARROW HAWK.

Synonyms—*Tinnunculus sparverius*; *Falco sparverius deserticolus*; *Falco sparverius phalaena*.

Status—An abundant resident of general distribution, breeding both in the valleys and in the mountains. There are, among others, breeding records from Fort Whipple, Santa Catalina Mountains, Huachuca Mountains, Mogollon Mountains, and Santa Cruz River near Tucson, these points being variously in the Lower Sonoran, Upper Sonoran, and Transition zones. It is locally migratory, but probably to be found in most of the lower valleys during the winter. Explicit winter records are from Fort Whipple, Tucson, Sulphur Spring Valley, and the San Pedro River.

110. **Polyborus cheriway** (Jacquin).

AUDUBON CARACARA.

Synonyms—*Polyborus tharus*; *Polyborus audubonii*; *Polyborus tharus* var. *auduboni*.

Status—Apparently not common. Reported from the vicinity of Tucson in summer, and from Yuma, doubtfully identified by Price (1899, p. 91), and the Salt River (Fisher, 1893a, p. 128) in winter. Found breeding sixteen miles southwest of Tucson by Herbert Brown (Bendire, 1892, p. 317).

111. **Pandion haliaëtus carolinensis** (Gmelin).

AMERICAN OSPREY.

Synonym—*Pandion carolinensis*.

Status—There seem to be no breeding records for the state though specimens have been taken in the summer months (see Fisher, 1893a, p. 130). Reported from scattered localities throughout Arizona during the migrations, usually along the larger streams.

112.

**Aluco pratincola** (Bonaparte).

## AMERICAN BARN OWL

Synonyms—*Strix pratincola*; *Strix americana*; *Strix flammea* var. *americana*; *Strix flammea*; *Aluco flammeus pratincola*.

Status—Probably most abundant in the central portions of the state. Coues (1866a, p. 49) states that it is a common resident at Fort Whipple, and Fisher (1893a, p. 132) lists numerous specimens from Fort Verde, taken in May, July, October and December. There are no records from the northern plateau region, and in southern Arizona it is rare. Found breeding at Tombstone on several occasions (F. C. Willard, MS). Found breeding also near Pilot Knob, on the Colorado River (Mus. Vert. Zool.). This was on the California side of the stream, but in the absence of Arizona records from the region, may be cited as evidence of the manner of occurrence of the species in this valley.

113.

**Asio wilsonianus** (Lesson).

## AMERICAN LONG-EARED OWL.

Synonyms—*Otus americanus*; *Otus wilsonianus*; *Otus vulgaris* var. *wilsonianus*; *Asio americanus*.

Status—Apparently of rare occurrence. Reported during the migrations and in the winter, from various scattered localities throughout the state: Fort Whipple; Tucson, February; Fort Verde, January, February; Sulphur Spring, April; Fort Huachuca, April.

114.

**Asio flammeus** (Pontopiddan).

## SHORT-EARED OWL.

Synonyms—*Strigiceps uliginosus*; *Brachyotus cassinii*; *Otus brachyotus*; *Asio accipitrinus*.

Status—A migrant and winter visitant. Reported from Fort Whipple, Colorado River, Fort Bowie, Gila Bend, and Sulphur Spring Valley. Met with by but a few observers, and in small numbers, except as reported by Coues (1866a, p. 50), who found it common on the Colorado River.

115.

**Strix occidentalis huachucae** Swarth.

## ARIZONA SPOTTED OWL.

Synonyms—*Syrnium occidentale*; *Strix occidentalis*.

Status—A resident, probably not very uncommon, in the higher mountains of southeastern Arizona. There seem to be published records of its occurrence only from the vicinity of Tucson (Ridgway, 1874, p. 239; Bendire, 1892, p. 343) and from the Huachuca Mountains (Swarth, 1910b, p. 1).

116.

**Cryptoglaux acadica acadica** (Gmelin).

## SAW-WHET OWL.

Synonym—*Nyctale acadica*.

Status—Known only from the record by Mearns (1890a, p. 54), who found it breeding on San Francisco Mountain.

117. **Otus asio cineraceus** (Ridgway).

## MEXICAN SCREECH OWL.

Synonyms—*Scops mcalli*, part; *Megascops asio trichopsis*, part; *Megascops asio cineraceus*, part; *Scops asio*, part; *Scops asio* var. *maccalli*, part.

Status—A common resident of the Upper Sonoran zone in southern Arizona. It has not been found on the plateau region of northeastern Arizona.

118. **Otus asio gilmani** Swarth.

## SAHUARO SCREECH OWL.

Synonyms—*Scops mcalli*, part; *Scops asio*; *Scops asio* var. *maccalli*, part; *Scops asio trichopsis*; *Scops trichopsis*; *Megascops asio trichopsis*, part; *Megascops asio cineraceus*, part; *Otus trichopsis*, part.

Status—A common resident of the hot Lower Sonoran valleys of southern and western Arizona. Ranges east to Tucson and the valley of the Santa Cruz River, west to the Colorado River; it ascends the latter stream at least as far as Fort Mohave (a specimen collected by Cooper at Fort Mohave, February 24, 1861, no. 4395, coll. Univ. Calif. Mus. Vert. Zool.).

119. **Otus trichopsis** (Wagler).

## SPOTTED SCREECH OWL.

Synonyms—*Megascops aspersus*; *Megascops trichopsis*.

Status—The Huachuca Mountains seems to be the only place in the United States where this species has been found, though it undoubtedly occurs also in some of the neighboring mountain ranges. In the Huachucas it is known as a rare summer visitant, about ten specimens having been secured. A set of three eggs taken in that range on June 19, 1901, by G. F. Breninger, and now in the collection of the Field Museum of Natural History, establishes a breeding record for the region. The parent bird being taken with the set (no. 16234 coll. Field Mus. Nat. Hist.) renders the identity unquestionable.

120. **Otus flammeolus** (Kaup).

## FLAMMULATED SCREECH OWL.

Synonyms—*Scops flammeola*; *Megascops flammeolus*.

Status—Probably a fairly common summer visitant of the higher mountains throughout the state. Specimens have been secured at the Grand Cañon (Merriam, 1890, p. 39), near Camp Apache (Henshaw, 1875b, p. 406), in the Huachuca Mountains (Swarth, 1904b, p. 9), and in the Chiricahua Mountains (specimen in Mus. Vert. Zool.). It has been found breeding in the Huachucas (Willard, 1909c, p. 199).

121. **Bubo virginianus pallescens** Stone.

## WESTERN HORNED OWL.

Synonyms—*Bubo magellanicus*; *Bubo virginianus*; *Bubo virginianus pacificus*; *Asio magellanicus pallescens*; *Bubo magellanicus pallescens*; *Bubo virginianus* var. *arcticus*; *Bubo virginianus subarcticus*; *Bubo virginianus saturatus*; *Asio magellanicus pacificus*.

Status—A fairly common resident, reported from all parts of the state. Found in Lower Sonoran (Tucson, Gila River, etc.), Transition (Huachuca Mountains, Hualpai Mountains) and Boreal (spruce belt of San Francisco Mountain: Merriam, 1890, p. 91).

122. ***Speotyto cunicularia hypogaea*** (Bonaparte).

BURROWING OWL.

Synonyms—*Athene hypugaea*; *Athene cunicularia*.

Status—Irregularly and locally distributed throughout the valleys of the state. In general it may be said to be common where the Prairie Dog (*Cynomys*) is found, in the lower Sonoran valleys of northeastern and southeastern Arizona, and decidedly rare elsewhere. Sparingly distributed across the plains of southwestern Arizona.

123. ***Glaucidium gnoma pinicola*** Nelson.

ROCKY MOUNTAIN PIGMY OWL.

Synonyms—*Glaucidium passerinum* var. *californicum*, part; *Glaucidium gnoma*.

Status—A resident in the Transition zone of the higher mountains throughout the state. Reported from many scattered localities: Prescott, San Francisco Mountain, Huachuca Mountains, Chiricahua Mountains, Mogollon Mountains, White Mountains.

124. ***Glaucidium phalaenoides*** (Daudin).

FERRUGINOUS PIGMY OWL.

Synonyms—*Glaucidium ferrugineum*; *Glaucidium passerinum* var. *californicum*, part.

Status—Apparently restricted to the valley of the upper Gila River, and its tributaries (Salt River, Santa Cruz River, etc.), where it is not uncommon. Has not been taken west of Gila Bend. A bird of the Lower Sonoran zone almost exclusively. Probably resident, though I know of no definite winter records.

125. ***Micropallas whitneyi*** (Cooper).

ELF OWL.

Synonyms—*Athene whitneyi*; *Micrathene whitneyi*.

Status—A common species in the Lower Sonoran zone in southern Arizona, from the valley of the Santa Cruz, and the Catalina Mountains, west to the Colorado River; north along the latter to the Big Sandy River (Stephens, 1903, p. 101) and Fort Mohave (Cooper, 1861, p. 118). During the breeding season it is almost entirely restricted to the region occupied by the giant cactus. There is, however, a breeding record from the Huachuca Mountains (Fisher, 1904, p. 80). It is probably migratory to some extent, as the records from scattering points outside the proper breeding range would indicate: Fort Mohave, April; Dragoon Mountains, April; Fort Bowie, October; etc.

126. ***Rhynchopsitta pachyrhyncha*** (Swainson).

THICK-BILLED PARROT.

Status—Known only as an irregular, occasionally abundant, mid-summer visitant to the Chiricahua Mountains (see Lusk, 1900, p. 129; Smith, 1907a, p. 104).

127. ***Crotophaga sulcirostris*** Swainson.

GROOVE-BILLED ANI.

Status—A single bird recorded as taken near the Huachuca Mountains in May, 1888 (Poling, 1891, p. 313).

128. ***Geococcyx californianus*** (Lesson).

ROADRUNNER.

Synonym—*Geococcyx viaticus*.

Status—A fairly common resident of the valleys and foothills below Transition. Reported from many low zone localities in all parts of the state. Probably breeds mainly in the Lower Sonoran zone, wandering to somewhat higher altitudes in late summer.

129. ***Coccyzus americanus occidentalis*** Ridgway.

CALIFORNIA CUCKOO.

Synonym—*Coccyzus americanus*.

Status—A summer visitant, fairly common, but of irregular distribution. It is found in the valleys of southern Arizona, along the Gila River and its tributaries, and also along the Colorado River, but has not been detected in the high plateau region of northeastern Arizona. Breeds mainly in the Lower Sonoran zone, but also, in limited numbers, in Upper Sonoran almost to the lower edge of Transition (Swarth, 1904b, p. 10).

130. ***Trogon ambiguus*** Gould.

COPPERY-TAILED TROGON.

Status—A rare and irregular summer visitant in the Transition of some of the higher mountains of extreme southern Arizona. Reported from the Huachuclas (Ridgway, 1887a, p. 161; 1887b, p. 147; Fowler, 1903, p. 69; etc.), the San Luis Mountains (Ridgway, 1911, p. 771) and, doubtfully, from the Santa Catalina Mountains (Scott, 1886, p. 425).

131. ***Ceryle alcyon alcyon*** (Linnaeus).

BELTED KINGFISHER.

Status—A fairly common migrant in all parts of Arizona. Although reported as a permanent resident, or as a summer visitant, by several observers (Coues, 1866a, p. 59; Scott, 1886, p. 425; Bendire, 1895, p. 34), I know of no specific instance of a nest having been found. Remains through the winter in some of the warmer southern valleys: Tucson (Scott, l. c.), Colorado River, below Yuma (Price, 1899, p. 92).

132. **Ceryle americana septentrionalis** Sharpe.

TEXAS KINGFISHER.

Synonym—*Ceryle americana*.

Status—Coues (1866c, p. 263) observed this species at points on the Colorado River between Forts Mohave and Yuma, in September, 1865. Since that time it was not again met with until February 13, 1910, when F. C. Willard secured a single specimen, an adult male, on the San Pedro River, near Fairbanks (Willard, 1910c, p. 110). This specimen is now in the University of California Museum of Vertebrate Zoology (no. 13990).

133. **Dryobates villosus leucothorectis** Oberholser.

WHITE-BREASTED WOODPECKER.

Synonyms—*Picus harrisi*; *Picus villosus harrisi*; *Dryobates villosus harrisi*; *Dendrocopus harrisi*; *Dryobates villosus hyloscopus*; *Dryobates villosus icastus*.

Status—A common resident of the higher mountains throughout the state. Breeds in the Canadian and Transition zones, but is of occasional occurrence in winter in some of the lower valleys: Verde Valley in winter (Mearns, 1890a, p. 251); Tucson, winter (Bendire, 1895, p. 53).

134. **Dryobates pubescens homorus** Cabanis and Heine.

BATCHELDER WOODPECKER.

Synonyms—*Picus pubescens*; *Picus gairdneri*; *Picus pubescens gairdneri*; *Dryobates pubescens gairdneri*; *Dryobates pubescens oreocetus*.

Status—There are but few records of the occurrence of this species in Arizona. Henshaw (1875b, p. 388) met with it on the Gila River in October, Scott (1886, p. 426) secured a single specimen at Riverside (also on the Gila River) in April, 1882, while Mearns (1890a, p. 252) found it breeding sparingly in the pine and spruce zones of the San Francisco and Mogollon mountains.

135. **Dryobates scalaris cactophilus** Oberholser.

CACTUS WOODPECKER.

Synonyms—*Picus scalaris*; *Dryobates scalaris*; *Dryobates scalaris bairdi*.

Status—A common resident of the Lower Sonoran zone throughout southern and western Arizona. It ranges north to Fort Apache, the south base of the Mogollon Mountains, and Fort Whipple; along the Colorado River still farther north: confluence of Beaverdam and Virgin rivers (Fisher, 1893b, p. 47).

136. **Dryobates arizonae** (Hargitt).

ARIZONA WOODPECKER.

Synonyms—*Picus stricklandi*; *Dryobates stricklandi*; *Picus arizonae*; *Dendrocopus arizonae*.

Status—A common resident of the live-oak belt of the mountains of the extreme southeastern corner of the state. Reported from the Santa Rita, Chiricahua, Huachuca, Whetstone, and Rincon mountains, and the east slope of the Santa Catalina Mountains.

137. **Picoides americanus dorsalis** Baird.

## ALPINE THREE-TOED WOODPECKER.

Status—A resident of the Canadian zone (pine and spruce belts) of the White, Mogollon and San Francisco mountains (Henshaw, 1875b, p. 391; Mearns, 1890a, p. 252).

138. **Sphyrapicus varius nuchalis** Baird.

## RED-NAPED SAPSUCKER.

Synonyms—*Picus varius*; *Sphyrapicus varius*; *Sphyrapicus nuchalis*.

Status—A fairly common migrant, and, in extreme southern Arizona and along the Colorado River, a winter visitant. It has several times been reported as "resident" in northern Arizona, but I know of no authentic breeding record.

139. **Sphyrapicus thyroideus** (Cassin).

## WILLIAMSON SAPSUCKER.

Synonym—*Sphyrapicus williamsonii*.

Status—Common resident in the Canadian zone of the higher parts of the White, Mogollon and San Francisco mountains (Mearns, 1890a, p. 252). Farther south it is a fairly common migrant and winter visitant in the mountains, while it has once been reported from the Colorado River, at Fort Mohave (Cooper, 1861, p. 121).

140. **Melanerpes erythrocephalus** (Linnaeus).

## RED-HEADED WOODPECKER.

Status—A single specimen was taken by Price in the Chiricahua Mountains, in the spring of 1894 (Bendire, 1895, p. 107). This is the only record for Arizona.

141. **Melanerpes formicivorus aculeatus** Mearns.

## MEARNS WOODPECKER.

Synonyms—*Melanerpes formicivorus*; *Melanerpes formicivorus bairdi*; *Melanerpes melanopogon*, part; *Balanosphyra formicivora aculeata*.

Status—A common resident of the live-oak regions. In northern Arizona ranges from the Grand Cañon of the Colorado (Merriam, 1890, p. 39), and Bill Williams Mountain (Wetmore, 1908, p. 379)—but not on San Francisco Mountain (see Merriam, 1890, p. 92)—west to the Hualpai Mountains (Stephens, 1903, p. 101) and Fort Whipple (Coues, 1866a, p. 55); extends southeastwardly throughout the state, on the southern boundary ranging west to the Santa Rita Mountains. Absent from the arid southwestern portion, all that would be south and west of a line drawn from the Hualpai to the Santa Rita Mountains. Reported as a straggler at Sacaton, September 5, 1910 (Gilman, 1911a, p. 35).

142. ***Asyndesmus lewisi* Riley.**

LEWIS WOODPECKER.

Synonyms—*Celeus torquatus*; *Melanerpes torquatus*; *Asyndesmus torquatus*.

Status—Mentioned by Merriam (1890, p. 92) as breeding in the piñon and cedar belt on San Francisco Mountain. Elsewhere in Arizona it has been noted as an erratic visitant, present in numbers one year, and absent the next, but apt to occur almost anywhere.

143. ***Centurus uropygialis* Baird.**

GILA WOODPECKER.

Synonyms—*Melanerpes uropygialis*.

Status—A common resident of the Lower Sonoran zone in southern and western Arizona. In the eastern part of the state it does not range north of the Salt River, but it ascends the Colorado at least to Fort Mohave; of occasional occurrence at Fort Whipple (Coues, 1866a, p. 54). It is practically restricted to such parts of the valleys of the Gila River and its tributaries as lie in the Lower Sonoran zone, and to the valley of the lower Colorado River.

144. ***Colaptes cafer collaris* Vigors.**

RED-SHAFTED FLICKER.

Synonyms—*Colaptes rubricatus*; *Colaptes mexicanus*; *Colaptes auratus mexicanus*; *Colaptes cafer*.

Status—Common resident, breeding in Upper Sonoran and Transition. Breeding records from the Santa Catalina, Mogollon, Hualpai, Huachuca and Santa Rita mountains. During the migrations and in the winter it is quite generally distributed.

145. ***Colaptes chrysoides mearnsi* Ridgway.**

MEARNS GILDED FLICKER.

Synonyms—*Colaptes ayresii*; *Colaptes chrysoides*.

Status—A common resident of the Lower Sonoran zone in parts of southern and western Arizona, extending east to the Santa Rita and the east slope of the Santa Catalina mountains, north to Fort Mohave. Its range is almost absolutely coextensive with that of the giant cactus, the easternmost limit of the species, some twenty-five miles southeast of Tucson, being abruptly defined along the line marking the edge of the territory where the cactus grows. West of the Santa Rita Mountains in the giant cactus region, the gilded flicker is abundant, east of that range it is unknown. On the Colorado River it occurs at the few points where the cactus is found, but it has also been taken in different associations, as at Fort Mohave (Cooper, 1861, p. 121).

146. ***Antrostomus vociferus macromystax* (Wagler).**

STEPHENS WHIP-POOR-WILL.

Synonyms—*Antrostomus vociferus*; *Antrostomus vociferus arizonae*.

Status—A fairly common summer visitant in some of the higher mountains of southeastern Arizona. Found in high Upper Sonoran and Transition zones in the Chiricahua, Santa Rita, Graham, Huachuca and Whetstone mountains. Reported once from the Santa Catalina Mountains, in April (Scott, 1886, p. 429).

147. ***Phalaenoptilus nuttallii nuttallii* (Audubon).**

POORWILL.

Synonyms—*Caprimulgus nuttallii*; *Antrostomus nuttallii*; *Phalaenoptilus nuttallii nitidus*.

Status—A common summer visitant throughout the state. Definite breeding records from Arizona are rare, but the birds have been taken or observed in the breeding season in Lower Sonoran, Upper Sonoran, and the lower part of the Transition zone. It has been found in December in the vicinity of Tucson (Bendire, 1895, p. 153).

148. ***Chordeiles virginianus henryi* Cassin.**

WESTERN NIGHTHAWK.

Synonyms—*Chordeiles virginianus*; *Chordeiles popetue*; *Chordeiles henryi*, part; *Chordeiles popetue henryi*.

Status—Common summer visitant of the higher mountains throughout the state: Flagstaff, Fort Whipple, San Francisco Mountain, Hualpai Mountains, Keam Cañon, Whetstone Mountains, Huachuca Mountains. Apparently does not occur below Upper Sonoran, even in the migrations. Has not been observed anywhere in southwestern Arizona.

149. ***Chordeiles acutipennis texensis* Lawrence.**

TEXAS NIGHTHAWK.

Synonyms—*Chordeiles texensis*; *Chordeiles henryi*, part.

Status—An abundant summer visitant of the Lower Sonoran zone in southern and western Arizona. In the eastern part of the state it apparently does not occur north of the Gila River; in the west it extends to a point some fifty miles south of Fort Whipple (Coues, 1866a, p. 58), and, along the valley of the Colorado River, quite to the northern boundary of the state: mouth of Beaverdam Creek (Fisher, 1893b, p. 53).

150. ***Chaetura vauxi* (Townsend).**

VAUX SWIFT.

Synonym—*Acanthylis pelagica*.

Status—Apparently a rare migrant in Arizona; has been observed at but a few points. Seen in the Santa Catalina Mountains in October (Scott, 1886, p. 429), at the Pima Indian Reservation on the Gila River, in September (Breninger, 1901a, p. 45), in the Huachuca Mountains in May (Swarth, 1904b, p. 16), and along the Colorado River at Potholes, Yuma, and Pilot Knob, in April and May (Mus. Vert. Zool.).

151. ***Aëronautes melanoleucus* (Baird).**

## WHITE-THROATED SWIFT.

Synonyms—*Acanthylis saxatalis*; *Cypselus melanoleucus*; *Panyptila melanoleuca*; *Micropus melanoleucus*.

Status—Breeds commonly on rocky cliffs and precipices throughout the state. Remains through the winter in parts at least of southern and western Arizona.

152. ***Eugenes fulgens* (Swainson).**

## RIVOLI HUMMINGBIRD.

Status—A common summer visitant of some of the higher mountains of southeastern Arizona. While apparently most numerous in the Huachuca and Chiricahua mountains, it has been reported from the Santa Ritas, the San Luis Mountains, the Santa Catalinas (one specimen, Rhoads, 1892, p. 117), and Mount Graham (Henshaw, 1875b, p. 379), the latter being probably its northern limit. The vertical breeding range—where the nests are located—is about from 5000 to 7000 feet, but the adult males are usually to be found in high Transition, above 8000 feet.

153. ***Cyanolaemus clemenciae* (Lesson).**

## BLUE-THROATED HUMMINGBIRD.

Synonym—*Cochiæna clemenciae*.

Status—A rather uncommon summer visitant in the damp shady cañons of the mountain ranges of southeastern Arizona. Has been found in the Santa Catalina, Santa Rita, Chiricahua, San Luis, and Huachuca mountains. Nests and eggs have been secured in the last mentioned range (see Breninger, 1903, p. 435; Willard, 1911, p. 46).

154. ***Archilochus alexandri* (Bourcier and Mulsant).**

## BLACK-CHINNED HUMMINGBIRD.

Synonym—*Trochilus alexandri*.

Status—Very common summer visitant, found generally in foothill country and along wooded streams. Ranges north into the Mogollon Mountains in central Arizona, where Mearns (1890a, p. 255) found it breeding in the pine belt, casually still farther north: 1 specimen, Keam Cañon, July 31 (Fisher, 1903, p. 35). Breeds along the Colorado River to the northern boundary of the state.

155. ***Calypte costae* (Bourcier).**

## COSTA HUMMINGBIRD.

Synonyms—*Scelasphorus costae*; *Atthis costae*; *Trochilus costae*.

Status—Common summer visitant of the Lower Sonoran zone in southern and western Arizona; reported north to Fort Grant and Tucson in the east, and to Fort Mohave on the Colorado River. A few seem to remain through the winter as it has been found both at Bill Williams River (Baird, 1858, p. 138) and in the extreme southwestern corner of Arizona (Bendire, 1895, p. 202) in February. Though found breeding only at low altitudes, it is of common occurrence in the high mountains during the migrations, especially in the late summer: Huachuca Mountains, 5500 feet, July (Swarth, 1904b, p. 17).

156. ***Calypte anna* (Lesson).**

ANNA HUMMINGBIRD.

Synonym—*Trochilus anna*.

Status—A rare autumnal visitant, reported from Camp Grant in September (Henshaw, 1875b, p. 375), from the Santa Catalina Mountains in October (Scott, 1886, p. 431), and from the Huachuca Mountains in October (Fisher, 1904, p. 80).

157. ***Selasphorus platycercus* (Swainson).**

BROAD-TAILED HUMMINGBIRD.

Synonym—*Trochilus platycercus*.

Status—Common summer visitant in the higher parts of the Transition zone and upward, throughout Arizona; reported from practically all of the higher mountain ranges visited by collectors: White Mountains, Camp Grant, Santa Catalina Mountains, Mogollon Mountains, San Francisco Mountain, Hualpai Mountains, Huachuca Mountains, Santa Rita Mountains. But one lowland record: Sulphur Spring Valley (Osgood, 1903, p. 130).

158. ***Selasphorus rufus* (Gmelin).**

RUFous HUMMINGBIRD.

Synonyms—*Polytmus rufus*; *Trochilus rufus*.

Status—During the late summer this species is an exceedingly common migrant in the higher mountains of the state. As it appears in numbers early in July it has been occasionally reported as a "summer resident", but it undoubtedly does not breed anywhere in Arizona. It is of comparatively rare occurrence in the spring.

159. ***Selasphorus alleni* Henshaw.**

ALLEN HUMMINGBIRD.

Synonym—*Trochilus alleni*.

Status—A rare visitant: A male secured in the Santa Catalina Mountains, July 23, 1884 (Scott, 1886, p. 431); specimens taken in the vicinity of Bisbee in August and September (Allen, 1893, p. 36); and in the Huachuca Mountains in July, in 1896 and in 1902 (Swarth, 1904b, p. 19). These are all the records for Arizona.

The Allen and Anna hummingbirds probably belong in the same category in their manner of occurrence in Arizona: species that occasionally wander to this exceptional distance only at the period of general dispersal in the late summer. They can hardly be regarded as migrants, following a fixed path to a definite destination.

160.

***Atthis heloisa moreomi* Ridgway.**

MORCOM HUMMINGBIRD.

Synonym—*Atthis morcomi*.

Status—Known only from two adult females secured by H. G. Rising in Ramsay Cañon, in the Huachuca Mountains, July 2, 1896 (see Ridgway, 1898b, p. 325). One of these two birds, the type, is in the United States National Museum; the second is in the University of California Museum of Vertebrate Zoology (no. 10299).

161.

***Stellula calliope* (Gould).**

CALLIOPE HUMMINGBIRD.

Synonym—*Trochilus calliope*.

Status—A fairly common migrant, chiefly in the higher mountains, where it makes its appearance in July and August. Scott (1886, p. 431) secured a specimen in the Santa Catalina Mountains, April 14, 1885, the only record I know of, of its occurrence in the spring. It has been found in the White Mountains, at Camp Grant and Camp Apache, in the Santa Catalina Mountains, and in the Huachucas.

162.

***Calothorax lucifer* (Swainson).**

LUCIFER HUMMINGBIRD.

Synonym—*Doricha enicura*.

Status—One specimen, an adult female, taken by Henshaw (1875b, p. 381) at Fort Bowie, August 8, 1874. Not otherwise observed in Arizona.

163.

***Uranomitra salvini* (Brewster).**

SALVIN HUMMINGBIRD.

Status—An immature female, the second known specimen, was shot by H. W. Marsden in the Huachuca Mountains, July 4, 1905. This bird is in the collection of L. B. Bishop (see Bishop, 1906, p. 337).

164.

***Basilinna leucotis* (Vieillot).**

WHITE-EARED HUMMINGBIRD.

Status—Rare summer visitant to some of the higher ranges of southeastern Arizona, reported from the Chiricahua, Santa Rita, and Huachuca mountains. There are published records of about half a dozen specimens taken in Arizona (see Fisher, 1894, p. 325; Swarth, 1904b, p. 19). It has not as yet been found actually breeding in the state, though it probably does so.

165.

***Cynanthus latirostris* Swainson.**

BROAD-BILLED HUMMINGBIRD.

Synonyms—*Circe latirostris*; *Iache latirostris*.

Status—A summer visitant, reported from the Santa Catalina, Santa Rita, and Huachuca mountains, and from the Santa Cruz River west of the Patagonia Mountains. Probably most abundant in the Santa Catalinas, where it is found along the streams from 3500 to 5000 feet. In the Huachucas it is of very rare oc-

currence. Henshaw (1875b, p. 380), records three specimens of this humming-bird "secured in the Chiricahua Mountains, at a point a few miles distant from old Camp Crittenden." As old Camp Crittenden is many miles distant from the Chiricahua Mountains, and in the foothills of the Santa Ritas, this would seem to be a mistake, the more so as in a previous report on the same collections (1875a, p. 162) mention is made of "three specimens secured in the Santa Rita Mountains near the border line." Bendire (1895, p. 228) explicitly states that the species is not yet recorded from the Chiricahua Mountains.

166. **Platypsaris aglaiae albiventris** (Lawrence).

XANTUS BECARD.

Synonym—*Platypsaris albiventris*.

Status—Price (1888b, p. 425) secured a single specimen, a male bird, near the summit of the Huachuca Mountains, June 20, 1888. This is the only record for Arizona, and for the United States.

167. **Tyrannus verticalis** Say.

WESTERN KINGBIRD.

Status—A common summer visitant in the Lower Sonoran zone of southern and western Arizona. Found in the valley of the Gila River, and along its more southern tributaries, and also along the Colorado River. Though not reported from any part of the high mountainous, central portion of the state, its presence in the arid northeastern corner is attested by a July record from Keam Cañon (Fisher, 1903, p. 35).

168. **Tyrannus vociferans** Swainson.

CASSIN KINGBIRD.

Status—Common summer visitant in parts of southeastern, and most of central and northern, Arizona. Breeds mostly in the Upper Sonoran zone, in places extending up into Transition. Reported from Nogales in January (Baird, 1858, p. 174). Has not been found in the arid Lower Sonoran southwestern portion of Arizona.

169. **Myiodynastes luteiventris** Sclater.

SULPHUR-BELLIED FLYCATCHER.

Status—A fairly common summer visitant in the higher mountain ranges of extreme southeastern Arizona. Has been found in the Santa Rita Mountains (Henshaw, 1875a, p. 161), the Chiricahua Mountains (Henshaw 1875b, p. 346), and the Huachuca Mountains (Swarth, 1904b, p. 21).

170. **Myiarchus magister magister** Ridgway.

ARIZONA CRESTED FLYCATCHER.

Synonyms—*Myiarchus cooperi*; *Myiarchus mexicanus cooperi*; *Myiarchus mexicanus magister*.

Status—A summer visitant in portions of southern and western Arizona, reported from the vicinity of Tucson and the Santa Cruz Valley (many records), the Gila Valley about Florence and Riverside (Scott, 1887, p. 17), and, the northernmost record, on the Big Sandy Creek, where Stephens (1903, p. 102) found it breeding in July, 1902. In southeastern Arizona, at least, its range coincides exactly with that of the giant cactus, in which it nests.

171. **Myiarchus cinerascens cinerascens** (Lawrence).

ASH-THROATED FLYCATCHER.

Synonyms—*Myiarchus mexicanus*; *Myiarchus crinitus* var. *cinerascens*; *Myiarchus nuttingi*.

Status—Abundant summer visitant, mostly in the Lower Sonoran zone, in southern and western Arizona, ranging north to Forts Apache and Whipple, and up the Colorado River the entire length of the state. It is also reported from Keam Cañon, in extreme northeastern Arizona, in July. Occurs as an occasional winter visitant, having been noted at Phoenix in December (specimen in Field Museum of Natural History), on the Gila River in December (Baird, 1858, p. 179), and at Fort Mohave in January (Cooper, 1870, p. 316).

172. **Myiarchus lawrencei olivascens** Ridgway.

OLIVACEOUS FLYCATCHER.

Synonyms—*Myiarchus lawrencei*; *Myiarchus lawrencei olivaceus*.

Status—Common summer visitant to a few mountain ranges of extreme southeastern Arizona. Most abundant in the Huachuclas and Santa Ritas, but also reported from the Chiricahuas, the Whetstones, the Santa Catalinas (Scott, 1887, p. 18, one specimen), and, doubtfully, from Fort Grant (Bendire, 1895, p. 270). Restricted almost entirely to brushy cañons of the Upper Sonoran zone.

173. **Sayornis sayus** (Bonaparte).

SAY PHOEBE.

Synonym—*Tyrannula saya*.

Status—Exceedingly common summer visitant of the plains and valleys throughout the state. Remains through the winter in southern Arizona: San Pedro River; Santa Catalina foothills (Scott, 1887, p. 18); and in the valley of the Colorado River: Yuma (Price, 1899, p. 92).

174. **Sayornis nigricans** (Swainson).

BLACK PHOEBE.

Synonym—*Sayornis nigricans semiatra*.

Status—Resident in southern Arizona, irregularly distributed, and nowhere very common. Though resident in the region, it is locally migratory, moving up into the hills in summer (to about 6000 feet), and down to the lower valleys during the winter months. It has been traced north to Fort Apache (Henshaw, 1875b, p. 347), Fort Verde (Coale, 1894, p. 215), to a point a few miles south of Fort Whipple (Coues, 1866a, p. 60), and, along the Colorado River, where it is a winter visitant only, to Fort Mohave. Breeding records appear to be all from points in Upper Sonoran, up to the lower edge of Transition.

175. *Nuttallornis borealis* (Swainson)

OLIVE-SIDED FLYCATCHER.

Synonym—*Contopus borealis*.

Status—Common in summer from the Transition zone upward, in the higher mountains north of the Mogollon Plateau; recorded as breeding on the San Francisco, White, and Mogollon mountains. During the migrations it is quite generally distributed.

176. *Myiochanes pertinax pallidiventris* (Chapman).

COUES FLYCATCHER.

Synonyms—*Contopus pertinax*; *Contopus pertinax pallidiventris*; *Horizopus pertinax pallidiventris*.

Status—Common summer visitant in the Transition zone of the mountains of southeastern Arizona (Huachuca, Santa Rita, Santa Catalina and White mountains, Mount Graham, etc.), extending northward, in diminishing numbers, to the Mogollon Mountains, where it was found breeding at Baker's Butte (Mearns, 1890a, p. 256); casually to Fort Whipple: 1 specimen, August 20, 1864 (Coues, 1866a, p. 60).

177. *Myiochanes richardsoni richardsoni* (Swainson).

WESTERN WOOD PEWEE.

Synonyms—*Contopus richardsoni*; *Contopus virens richardsoni*; *Horizopus richardsoni*; *Contopus veliei*.

Status—Common in summer in Upper Sonoran and Transition throughout the state. During the migrations it is generally distributed.

178. *Empidonax difficilis difficilis* Baird.

WESTERN FLYCATCHER.

Synonym—*Empidonax flaviventris* var. *difficilis*.

Status—A fairly common summer visitant, mostly in Transition, occurring in all the higher mountain ranges. Abundant and of general distribution during the migrations.

179. *Empidonax trailli trailli* (Audubon).

TRAILL FLYCATCHER.

Synonyms—*Empidonax pusillus*; *Empidonax trailli* var. *pusillus*.

Status—Probably fairly common in summer along most of the wooded streams in the lower valleys, though found actually breeding at but a few points: Tucson, Fort Whipple, San Pedro River, Santa Cruz River. During the migrations it is abundant and generally distributed.

180. *Empidonax hammondi* (Xantus).

HAMMOND FLYCATCHER.

Status—A migrant, abundant and generally distributed throughout the state. It is not known to breed anywhere in Arizona.

181.

**Empidonax wrighti** Baird.

WRIGHT FLYCATCHER.

Synonym—*Empidonax obscurus*, part.

Status—A fairly common migrant, at least in eastern Arizona. I know of no authentic instance of the breeding of this species in the state.

182.

**Empidonax griseus** Brewster.

GRAY FLYCATCHER.

Synonyms—*Empidonax obscurus*, part; *Empidonax wrightii*, part.

Status—This species and the last (*E. wrightii*) have been so hopelessly confused in years past that it is impossible to allocate the various citations with accuracy, but it is certain that *E. griseus* has been many times mentioned under the name of the allied species. Both are migrants in Arizona, and both probably occur (*E. griseus* certainly) across the breadth of the state. Of neither form, however, is there any undoubted breeding record for Arizona. *E. griseus* is probably to be found in winter in the warmer parts of southern Arizona, and along the lower Colorado River.

183.

**Empidonax fulvifrons pygmaeus** Coues.

BUFF-BREASTED FLYCATCHER.

Synonyms—*Empidonax pygmaeus*; *Mitrephorus pallescens*; *Mitrephorus fulvifrons* var. *pallescens*.

Status—A summer visitant, nowhere very common, but found in several of the mountain ranges of southeastern Arizona. It breeds mostly at the lower edge of the Transition zone, but is very locally distributed—thus it may be fairly common in one cañon, and almost unknown in an adjoining one. Has been found breeding in the Chiricahua, Huachuca, and Santa Rita mountains, and migrating birds have been taken at Forts Apache and Bowie. The subspecies was described from a specimen secured by Coues at Fort Whipple, which would seem to be its extreme northern limit. It has so far not been found in the Mogollon Mountains, which lie south of that point, but the fact of its breeding at Inscription Rock, New Mexico—close to the Arizona boundary (Henshaw, 1874, p. 128), points to the probability of its doing so in the Mogollons.

184.

**Pyrocephalus rubinus mexicanus** Sclater.

VERMILION FLYCATCHER.

Synonyms—*Pyrocephalus rubinus*; *Pyrocephalus mexicanus*.

Status—An abundant resident along the wooded streams of southern and western Arizona, locally migratory, but occurring in the warmer parts of the region throughout the year. In a general way it may be said to be restricted to the Lower Sonoran zone in the valleys of the Colorado and Gila rivers, and their tributaries. In central Arizona it extends north to Fort Verde (Coale, 1894, p. 218); casually to Fort Whipple (Coues, 1865, pp. 163, 538, 1 specimen); along the Colorado River, to the Big Sandy, Bill Williams River, and Ehrenberg (Stephens, 1903, p. 102), casually to Fort Mohave (Cooper, 1870, p. 333; one seen May 24). In eastern Arizona does not range north of the Salt River.

185. **Camptostoma imberbe** Sclater.

BEARDLESS FLYCATCHER.

Synonym—*Ornithion imberbe ridgwayi*.

Status—A rare summer visitant, known to occur in only a limited area in the Santa Cruz Valley, in the vicinity of Tucson. The conditions apparently required by the species, dense growths of tall timber, are met with in Arizona at so very few points, at the low altitudes frequented by the species, that its known range will probably not be greatly extended in the state.

186. **Otocoris alpestris leucolaema** (Coues).

DESERT HORNED LARK.

Synonyms—(?) *Otocoris alpestris*, part; (?) *Eremophila cornuta*, part; *Eremophila alpestris* var. *chrysolaeama*, part; *Otocorys arenicola*, part; *Otocoris alpestris arenicola*, part; *Otocoris alpestris enthymia*.

Status—Common winter visitant. There are numerous winter records of horned larks from the northern and central portion of Arizona, some of which are known to pertain to this subspecies, and others that probably do so.

187. **Otocoris alpestris adusta** Dwight.

SCORCHED HORNED LARK.

Synonyms—*Eremophila alpestris chrysolaeama*, part; (?) *Otocoris alpestris chrysolaeama*, part; *Otocoris alpestris aphrasta*.

Status—Common resident on the plains of extreme southeastern Arizona, from the west side of the Santa Rita Mountains (Swarth, 1905a, p. 79) east to Fort Bowie (Bendire, 1895, p. 345). North to Tucson and Oracle. Other points of record are Fort Huachuca, San Pedro River, Greaterville, Willow Spring, Sulphur Spring, and Wilcox.

188. **Otocoris alpestris pallida** Dwight.

SONORA HORNED LARK.

Synonyms—*Otocoris alpestris arenicola*, part; *Otocoris alpestris leucansip-tila*.

Status—Resident on the desert plains of extreme southwestern Arizona, and probably northward in the Colorado Valley to southern Nevada (cf. Oberholser, 1902, pp. 864-866).

189. **Otocoris alpestris occidentalis** McCall.

MONTEZUMA HORNED LARK.

Synonyms—*Eremophila cornuta*, part; *Eremophila alpestris chrysolaeama*, part; *Otocoris alpestris adusta*, part; *Otocoris alpestris arenicola*, part; (?) *Otocoris alpestris actia*.

Status—Breeding, and perhaps resident, in northern and central Arizona, north of the Mogollon Divide, and west to Fort Whipple (Coues, 1866a, p. 79). There are breeding records from San Francisco Mountain, Fort Verde, and the Little Colorado River (Oberholser, 1902, p. 855). In the Mogollon Mountains it has been found breeding up to 10,000 feet (Mearns, 1890a, p. 256). Localities at which it has been found at other seasons are Pima County, Wilcox, San Pedro River, and Fort Huachuca.

190. ***Pica pica hudsonia* (Sabine).**

## MAGPIE.

Synonyms—*Pica hudsonica*; *Pica caudata* var. *hudsonica*.

Status—Secured by Kennerly (1856, p. 10) on the Little Colorado River. Recorded by Henshaw (1874, p. 123) from the Rio Puerco, at a point sixty miles west of Wingate, New Mexico, and hence well within the Arizona boundary. Not otherwise recorded from the state.

191. ***Cyanocitta stelleri diademata* (Bonaparte).**

## LONG-CRESTED JAY.

Synonyms—*Cyanocorax stelleri*; *Cyanocitta macrolopha*; *Cyanura macrolopha*; *Cyanura stelleri* var. *macrolopha*; *Cyanocitta stelleri macrolopha*, *Cyanocitta stelleri*.

Status—A common resident of the mountains throughout the state from the Transition zone upward. In northern Arizona it ranges west as far as the Grand Cañon of the Colorado (Merriam, 1890, p. 39), and the Hualpai Mountains (Stephens, 1903, p. 102). Though resident at high altitudes it occasionally wanders into the lowlands, far from the mountains, as observed at Sacaton in November, 1910, by Gilman (1911a, p. 35).

192. ***Aphelocoma woodhousei* (Baird).**

## WOODHOUSE JAY.

Synonyms—*Cyanocorax californica*; *Cyanocitta californica*; *Cyanocitta woodhousei*; *Cyanocitta floridana* var. *woodhousei*; *Aphelocoma floridana* var. *woodhousei*.

Status—Fairly common resident, mostly in Upper Sonoran, and occurring in favorable localities throughout the state. Has not been observed anywhere in southwestern Arizona, west of Sacaton, nor along the Colorado River below the Grand Cañon.

193. ***Aphelocoma sieberi arizonae* (Ridgway).**

## ARIZONA JAY.

Synonyms—*Cyanocitta sordida*; *Cyanocitta ultramarina* var. *arizonae*; *Aphelocoma sordida arizonae*.

Status—An abundant resident of the live oak regions of the mountain ranges of southeastern Arizona. It has been reported from the Santa Rita, Chiricahua, Santa Catalina, Huachuca, Dragoon, Whetstone, and Rincon mountains, Mount Graham, and from a point thirty miles south of Camp Apache, apparently the northern limit of the species.

194. ***Perisoreus canadensis capitalis* Ridgway.**

## ROCKY MOUNTAIN JAY.

Status—Reported only from the White Mountains, where it is apparently a not uncommon resident (Henshaw, 1875b, p. 339; Mearns, 1890a, p. 256).

195. *Corvus corax sinuatus* Wagler.

AMERICAN RAVEN.

Synonyms—*Corvus corax*; *Corvus splendens*; *Corvus cacaloti*; *Corvus car-nivorus*; *Corus corax carnivorus*.

Status—Apparently to be found throughout the year in nearly all parts of Arizona. It appears to breed mostly in the higher mountains, though it is a common sight to see ravens in summer, probably non-breeding birds, almost anywhere in the lower valleys.

196. *Corvus cryptoleucus* Couch.

WHITE-NECKED RAVEN.

Status—Has been observed only in the extreme southeastern corner of Arizona, in Cochise County, and west and north to Oracle, Tucson, and the valley of the Santa Cruz River. It is restricted wholly to the Lower Sonoran zone, and is mainly a summer visitant to the region. Some remain throughout the winter in favorable localities: Wilcox, November (Bailey, 1903, p. 87); San Pedro River, February (Willard, 1910c, p. 110).

197. *Corvus brachyrhynchos hesperis* Ridgway.

WESTERN CROW.

Synonym—*Corvus americanus*.

Status—A very uncommon species in most parts of Arizona. I know of but four records for the state; at Fort Apache in November (Henshaw, 1875a, p. 160); in the Santa Catalina Mountains and at Mineral Creek during the migrations (Scott, 1887, p. 21); breeding commonly in the Mogollon Mountains (Mearns, 1890a, p. 256); and uncommon in the vicinity of San Francisco Mountain (Merriam, 1890, p. 94).

198. *Nucifraga columbiana* (Wilson).

CLARKE NUTCRACKER.

Synonym—*Picicorvus columbianus*.

Status—Recorded as breeding in the higher parts of San Francisco Mountain, where it is common (Merriam, 1890, p. 94). Adults seen feeding full-grown young in the Santa Catalina Mountains, May 21, 1904 (F. C. Willard, MS). During the migrations and in winter, it has been noted at irregular intervals at scattered points: Fort Whipple, White Mountains, Huachuca Mountains, etc., and even from the desert region at Sacaton, on one occasion, October 17, 1910 (Gilman, 1911a, p. 35).

199. *Cyanocephalus cyanocephalus* (Wied).

PIÑON JAY.

Synonym—*Gymnokitta cyanocephala*.

Status—A resident about Fort Whipple, according to Coues (1866a, p. 91). It has also been reported as breeding in the piñon belt of San Francisco Mountain (Merriam, 1890, p. 94), and in the vicinity of Williams (Wetmore, 1908, p. 380). It is an erratic visitant to other parts of Arizona (Huachuca Mountains, Santa Catalina Mountains, Gila River, Keam Cañon, etc.).

200. ***Molothrus ater obscurus* (Gmelin).**

DWARF COWBIRD.

Synonyms—*Molothrus pecoris*; *Molothrus pecoris* var. *obscurus*; *Molothrus obscurus*; *Molothrus ater*.

Status—Found in the greatest abundance in the valleys of the Colorado and Gila rivers, and their tributaries, and up into the foothills of the adjacent mountains. Most abundant as a summer visitant, and reported from many localities, north to the Mogollon Mountains (Mearns, 1890a, p. 257), Fort Whipple (Coues, 1866a, p. 90), and Fort Mohave (Mus. Vert. Zool.). Remains throughout the winter on the lower Colorado River. The only winter record I know of outside of the Colorado Valley is of a single specimen taken by Bendire (1895, p. 44) on Rillito Creek, near Tucson, January 24, 1873.

201. ***Tangavius aeneus aeneus* (Wagler).**

BRONZED COWBIRD.

Synonym—*Tangavius aeneus involucratus*.

Status—An occasional summer visitant in the hot valleys of extreme southern Arizona. Seen in the vicinity of Tucson during the summer of 1909, from April to September (Visser, 1909, p. 307; 1910, p. 210); and at Sacaton, also in the summer of 1909 (Gilman, 1910, p. 46).

202. ***Xanthocephalus xanthocephalus* (Bonaparte).**

YELLOW-HEADED BLACKBIRD.

Synonyms—*Agelaius xanthocephalus*; *Xanthocephalus icterocephalus*; *Xanthocephalus longipes*.

Status—Reported as breeding in the Mogollon Mountains (Mearns, 1890a, p. 257) and at Fort Whipple (Coues, 1866a, p. 91). It winters commonly south of the Gila River (Tucson, Fort Huachuca, etc.), and along the Colorado River from Fort Mohave southward.

203. ***Agelaius phoeniceus sonoriensis* Ridgway.**

SONORA RED-WINGED BLACKBIRD.

Synonyms—*Agelaius gubernator*, part; *Agelaius phoeniceus*, part; *Agelaius phoeniceus longirostris*.

Status—A common resident in the valley of the Colorado River, at least. Its manner of occurrence in other parts of Arizona has yet to be determined.

204. ***Agelaius phoeniceus fortis* Ridgway.**

NORTHERN RED-WINGED BLACKBIRD.

Status—According to Ridgway (1902, p. 339) this subspecies occurs during the migrations as far south as "Arizona (Fort Verde, December, February; Big Chino Valley, March)."

205. ***Agelaius phoeniceus neutralis* Ridgway.**

SAN DIEGO RED-WINGED BLACKBIRD.

Synonyms—(?) *Agelaius phoeniceus*, part; (?) *Agelaius gubernator*, part; *Agelaius phoeniceus sonoriensis*, part.

Status—The status of the red-winged blackbirds of Arizona is as yet unsettled. The type of *A. p. sonoriensis* came from Fort Grant, in southeastern Arizona,\* but breeding birds examined from the San Pedro River, in the same general region, are *A. p. neutralis*. It may be that one form (*sonoriensis*) breeds along the Colorado River and the lower Gila, these river valleys being the only portion of the Lower Sonoran zone which is adapted to the species; and that the other (*neutralis*) occupies the higher Upper Sonoran zone in northern and eastern Arizona. At any rate some form of the red-winged blackbird breeds in suitable localities throughout the state. Along the Colorado River, and in the valleys of southern Arizona, they are to be found the year through; in the winter months the several varieties possibly occur together in the same places.

206.

***Sturnella magna hoopesi* Stone.**

TEXAS MEADOWLARK.

Synonym—*Sturnella magna mexicana*.

Status—Known to occur along the United States-Mexican boundary line, at least in eastern Arizona, specimens having been taken at Camp Crittenden, Fort Huachuca and Calabasas; also reported from the vicinity of Williams, in the northern part of the state (Wetmore, 1908, p. 381).

207.

***Sturnella neglecta* Audubon.**

WESTERN MEADOWLARK.

Synonym—*Sturnella magna neglecta*.

Status—Resident throughout the state, but irregularly and locally distributed, and, for the most part, not very common. In the Mogollon Mountains, ranges up to 10,000 feet (Mearns, 1890a, p. 257). In southern Arizona occurs in the Lower Sonoran valleys only.

208.

***Icterus parisorum* Bonaparte.**

SCOTT ORIOLE.

Status—An abundant migrant and fairly common summer visitant in parts of southeastern and central Arizona. It is distinctly a bird of the Upper Sonoran zone, known to breed in southern Arizona, in the foothill regions of the Huachuca, Santa Rita, Santa Catalina, Rincon, Quijotoa and Whetstone mountains; doubtless it is to be found in other ranges in the same general region which have not been reported upon. Has also been found in summer at Oracle (Rhoads, 1892, p. 120) and at Beale Spring in western Arizona (Stephens, 1903, p. 102). Has not been found in southwestern Arizona, nor at any point along the Colorado River, except for one bird doubtfully identified at Fort Mohave (Cooper, 1870, p. 276).

\* According to the A. O. U. *Check-List*, 1910 ed., p. 233. Ridgway (*Birds North and Middle America*, II, 1902, p. 337) gives it as Mazatlan, western Mexico.

209. ***Icterus cucullatus nelsoni* Ridgway.**

ARIZONA HOODED ORIOLE.

Synonym—*Icterus cucullatus*.

Status—Common summer visitant of the Lower Sonoran zone in southern Arizona, ranging north to Fort Grant in the east (Coues, 1868, p. 84), and to the Big Sandy and Bill Williams River, in the western parts of the state (Stephens, 1903, p. 103). Found breeding near Pilot Knob, on the California side of the Colorado River (Mus. Vert. Zool.).

210. ***Icterus bullocki* (Swainson).**

BULLOCK ORIOLE.

Status—Summer visitant, found in suitable localities throughout the state. In southern Arizona its range overlaps that of *I. c. nelsoni*, but it is much less abundant than that species. Points of record are all in the Upper and Lower Sonoran zones; it has not been found in the high central plateau region. Breeds commonly along the Colorado River, at least as far up as The Needles (Mus. Vert. Zool.).

211. ***Euphagus cyanocephalus* (Wagler).**

BREWER BLACKBIRD.

Synonyms—*Scolecophagus ferrugineus*; *Scolecophagus cyanocephalus*.

Status—An abundant migrant and winter visitant throughout southern Arizona. There are but few definite breeding records for any part of the state. It is known to breed commonly in the Mogollon and San Francisco mountains (Mearns, 1890a, p. 257), and Coues (1866a, p. 90) speaks of it as a summer resident at Fort Whipple. Otherwise it has been observed in all parts of Arizona as a transient or as a winter visitant.

212. ***Hesperiphona vespertina montana* Ridgway.**

WESTERN EVENING GROSBEAK.

Synonyms—*Hesperiphona vespertina*; *Coccothraustes vespertina*; *Coccothraustes vespertina montana*.

Status—Breeds in the high mountains of central Arizona: San Francisco Mountain (Merriam, 1890, p. 95), White Mountains (Swinburne, 1888a, p. 113), Mogollon Mountains (Mearns, 1890a, p. 246); occasionally in some of the ranges farther south: Santa Catalina and Huachuca mountains (Willard, 1910a, p. 60). During the migrations and in winter it is reported from various scattered localities: Huachuca Mountains, Santa Catalina Mountains, Fort Verde, and Fort Apache.

213. ***Carpodacus purpureus californicus* Baird.**

CALIFORNIA PURPLE FINCH.

Status—The only Arizona record is that of Scott (1887, p. 196), who found the species abundant in the Santa Catalina Mountains from November, 1885, to February, 1886.

214. **Carpodacus cassini** Baird.

## CASSIN PURPLE FINCH.

Synonyms—*Carpodacus purpureus*; *Carpodacus pileatus*.

Status—Reported as a resident in the pine belt of the Mogollon Mountains (Mearns, 1890a, p. 258). During the migrations and in winter it is quite generally distributed: Fort Whipple (Coues, 1866a, p. 80); Pueblo Creek and Aztec Mountains, January (Kennerly, 1859, p. 27); Bill Williams Mountain, March (Wetmore, 1908, p. 381). In southern Arizona as a winter visitant only, seldom descending into the low valleys, but common in the higher mountains: Santa Catalina Mountains and Tucson (Scott, 1887, p. 197); Dragoon Mountains (Osgood, 1903, p. 131); Huachuca Mountains (Swarth, 1908, p. 113).

215. **Carpodacus mexicanus frontalis** (Say).

## HOUSE FINCH.

Synonyms—*Fringilla frontalis*; *Carpodacus familiaris*; *Carpodacus californicus*; *Carpodacus cassini*, part; *Carpodacus mexicanus obscurus*; *Carpodacus frontalis*.

Status—Fairly common resident throughout the state, though locally migratory. Breeds below Transition; restricted to the warmer valleys in winter. Occurs nowhere in Arizona in such large numbers as are seen on the Pacific coast of California.

216. **Loxia curvirostra stricklandi** Ridgway.

## MEXICAN CROSSBILL.

Synonyms—*Curvirostra americana*; *Loxia curvirostra* var. *americana*; *Loxia curvirostra mexicana*.

Status—Breeds from the Transition zone upwards in the mountains of the high plateau region: Williams, breeding (Wetmore, 1908, p. 382); Mogollon Mountains (Mearns, 1890a, p. 258); possibly in some of the more southern ranges also. Noted at various scattered points (usually at high altitudes) during the migrations, and in the winter: San Francisco Mountain, Grand Cañon, Mount Graham, Huachuca, Santa Catalina and Chiricahua mountains.

217. **Passer domesticus** (Linnaeus).

## ENGLISH SPARROW.

Status—Common at the present time in most of the larger towns and along the railroads. The species reached Tucson in 1903, and Tombstone in 1904 (Howard, 1906, p. 67). Also recorded from Benson, Flagstaff, Williams, Phoenix and Mellen.

218. **Astragalinus tristis pallidus** (Mearns).

## PALE GOLDFINCH.

Synonyms—*Chrysomitris tristis*; *Spinus tristis*; *Spinus tristis pallidus*.

Status—From the paucity of records this is evidently a rare species in Arizona. Henshaw (1875a, p. 158) cites Bendire as having observed it at Tucson; Scott (1887, p. 197) secured six specimens in the Santa Catalina Mountains in December, 1885, and February, 1886; and Mearns (1890a, p. 244) found it, apparently abundant, at Fort Verde in winter and spring.

219. ***Astragalinus psaltria hesperophilus* Oberholser.**

## GREEN-BACKED GOLDFINCH.

Synonyms—*Chrysomitris psaltria*; *Chrysomitris mexicana*; *Chrysomitris mexicanus* var. *arizonae*; *Chrysomitris psaltria* var. *arizonae*; *Astragalinus psaltria arizonae*; *Astragalinus psaltria*; *Spinus psaltria*; *Spinus psaltria arizonae*.

Status—Occurs below Transition throughout the state. In northern Arizona it is a summer visitant only, as is the case in the mountain ranges of the south as well. In the lower valleys of southern Arizona it occurs irregularly throughout the year. Noted as a common resident, and found breeding, along the Colorado River, between Needles and Yuma (Mus. Vert. Zool.).

220. ***Astragalinus lawrencei* (Cassin).**

## LAWRENCE GOLDFINCH.

Synonyms—*Chrysomitris lawrencei*; *Spinus lawrencei*.

Status—Winter visitant, probably regularly, though in small numbers, to the Colorado Valley; of rare and irregular occurrence elsewhere. Coues (1866a, p. 83) noted it at Fort Whipple, and Cooper (1870, p. 171) at Fort Mohave during the winter months.

Its observation on the Colorado River at Riverside Mountain, March 17, 1910 (Mus. Vert. Zool.), although on the California side of the stream, is confirmatory of its probably regular occurrence in this region in winter. Scott (1887, p. 199) recorded a specimen taken by Herbert Brown at Tucson, February 28, 1886, and Price (1899, p. 92) reported it from the vicinity of Yuma in December. These are the only records.

221. ***Spinus pinus* (Wilson).**

## PINE SISKIN.

Synonym—*Chrysomitris pinus*.

Status—Common resident in the high mountains of the plateau region: San Francisco Mountain, breeding (Merriam, 1890, p. 95); Mogollon Mountains, resident (Mearns, 1890a, p. 258); breeding at least as far south as Mount Graham (Henshaw, 1875a, p. 158). Common in winter in the higher ranges of southern Arizona: Chiricahua, Santa Catalina and Huachuca mountains; and of occasional occurrence in the valleys during the migrations: San Pedro River, April (Swarth, 1904b, p. 37).

222. ***Calcarius ornatus* (Townsend).**

## CHESTNUT-COLLARED LONGSPUR.

Synonyms—*Plectrophanes melanomus*; *Plectrophanes ornatus*.

Status—Abundant migrant, and, less commonly, a winter visitant in extreme eastern Arizona, reported from St. Johns, Fort Grant, Fort Huachuca, Fort Bowie, Sulphur Spring Valley, etc.; occasionally straggling farther westward: Santa Catalina Mountains, November 11, 1885; Fort Whipple, 1 specimen, October 17, 1864; Sacaton, October 25, 1909.

223. **Rhynchophanes mccowni** (Lawrence).

McCOWN LONGSPUR.

Synonym—*Plectrophanes maccownii*.

Status—Occurs in the same manner as *Calcarius ornatus*, and over practically the same territory in eastern Arizona. It is more irregular in its appearance and usually not as abundant as the Chestnut-collared Longspur. Reported from Fort Bowie, Fort Apache, St. Johns, Sulphur Spring Valley, Fort Huachuca, and Fort Lowell.

224. **Poocetes gramineus confinis** Baird.

WESTERN VESPER SPARROW.

Synonyms—*Zonotrichia graminea*; *Poocetes gramineus*.

Status—The only breeding records are from the Mogollon and San Francisco mountains (Mearns, 1890a, p. 259), and Fort Whipple (Coues, 1866a, p. 84). It is exceedingly abundant in winter and during the migrations, throughout southern Arizona and along the valley of the Colorado River.

225. **Passerculus sandwichensis alaudinus** Bonaparte.

WESTERN SAVANNAH SPARROW.

Synonyms—*Passerculus savanna*; *Passerculus alaudinus*, part; *Ammodramus sandwichensis alaudinus*.

Status—A migrant and winter visitant in the valleys of southern Arizona and along the Colorado River. There are but few records of the occurrence of the species, and it does not appear to have been found anywhere in abundance.

226. **Passerculus sandwichensis nevadensis** Grinnell.

NEVADA SAVANNAH SPARROW.

Synonym—*Passerculus alaudinus*, part.

Status—The record by Coues (1866a, p. 84) of the occurrence of a Savannah sparrow as a common summer visitant at Fort Whipple probably pertains to this subspecies. Three specimens taken on the Colorado River, two near the mouth of Bill Williams River, March 13, and one five miles north of Laguna, April 22, 1910 (Mus. Vert. Zool.).

227. **Passerculus rostratus rostratus** (Cassin).

LARGE-BILLED SPARROW.

Status—"Casual in Arizona" (A. O. U. *Check-List*, 1910, p. 255). This record was based on a specimen taken August 15, 1902, at Yuma, by Herbert Brown, and sent to the Biological Survey for identification, according to information received by me from Mr. W. W. Cooke.

228. **Ammodramus bairdi** (Audubon).

BAIRD SPARROW.

Synonyms—*Centronyx bairdi*; *Passerculus bairdi*; *Coturniculus bairdi*.

Status—Common migrant on the open grassy plains of the extreme southeastern corner of the state, reported from Camp Grant, Camp Crittenden, and the vicinity of the Huachuca Mountains. A few probably remain through the winter in favorable localities.

229. ***Ammodramus savannarum bimaculatus* Swainson.**

## WESTERN GRASSHOPPER SPARROW.

Synonyms—*Ammodramus passerinus*; *Coturniculus passerinus*; *Coturniculus passerinus* var. *perpallidus*; *Ammodramus savannarum perpallidus*; *Ammodramus savannarum*; *Coturniculus savannarum bimaculatus*.

Status—Reported only from western and southern Arizona. Probably breeds in parts of southern Arizona, at least, as Henshaw (1875b, p. 257) secured very young birds in the Sonoita Valley, at the southeastern base of the Santa Rita Mountains; while there is a specimen recorded as taken at Los Nogales in June (Baird, 1859, p. 15). It has been taken at Bill Williams River in February (Kennerly, 1859, p. 28), and in the Santa Catalina Mountains in January (Scott, 1887, p. 199).

230. ***Chondestes grammacus strigatus* Swainson.**

## WESTERN LARK SPARROW.

Synonym—*Chondestes grammaca*.

Status—Common summer visitant in suitable localities throughout Arizona. Breeding records are from points in Lower and Upper Sonoran, up to the lower edge of Transition; Santa Catalina Mountains up to 5000 feet (Scott, 1887, p. 199); Mogollon and San Francisco mountains, summer resident (Mearns, 1890a, p. 259); Huachuca Mountains, summer visitant (Swarth, 1904b, p. 39); etc. Locally migratory; during the winter months restricted mainly to the warmer valleys of the southern and western parts of the state: San Pedro River, February (Willard, 1910c, p. 110); Tucson, resident (Scott, l. c.); Yuma, December (Price, 1899, p. 92).

231. ***Zonotrichia leucophrys leucophrys* (Forster).**

## WHITE-CROWNED SPARROW.

Status—A common migrant throughout Arizona, usually in company with *Zonotrichia l. gambeli*. Possibly a few remain through the winter in parts of southern Arizona, though there is no authentic instance on record. Mearns (1890a, p. 259) found the species at the base of San Francisco Mountain in June, "apparently breeding". It has not otherwise been found in the summer. Noted as a transient in the Colorado Valley between Needles and Yuma (Mus. Vert. Zool.).

232. ***Zonotrichia leucophrys gambeli* (Nuttall).**

## INTERMEDIATE SPARROW.

Synonyms—*Zonotrichia leucophrys*, part; *Zonotrichia gambelii*; *Zonotrichia leucophrys intermedia*; *Zonotrichia intermedia*.

Status—Abundant migrant throughout the state. Winter records are all from points south and west of the Mogollon Divide; Colorado River Valley from Fort Mohave southward, Fort Whipple, San Pedro River, etc., where it is common during the winter months.

233. ***Spizella monticola ochracea* Brewster.**

WESTERN TREE SPARROW.

Synonyms—*Spizella canadensis*; *Spizella monticola*.

Status—Kennerly (1859, p. 29) found this species in December on the Little Colorado River, while Henshaw (1875a, p. 159) reported it, on the authority of Bendire, as of occasional occurrence in winter in the vicinity of Tucson. These are the only records for the state.

234. ***Spizella passerina arizonae* Coues.**

WESTERN CHIPPING SPARROW.

Synonyms—*Spizella socialis*; *Spizella socialis arizonae*.

Status—Common summer visitant in parts of central Arizona. Found breeding at Fort Whipple (Coues, 1866a, p. 87), and on the Mogollon and San Francisco mountains (Mearns, 1890a, p. 259). In southern Arizona it is a very abundant migrant, and in the warmer valleys a winter visitant also. Observed in some numbers along the Colorado River, from The Needles southward in February, March, and April; seen at Potholes, May 1, under conditions possibly indicative of breeding (Mus. Vert. Zool.). Two specimens taken by Cooper at Fort Mohave, December 24, 1860 (in Mus. Vert. Zool.).

235. ***Spizella pallida* (Swainson).**

CLAY-COLORED SPARROW.

Synonym—*Spizella pusio*.

Status—Henshaw (1875b, p. 278) secured specimens at Camp Crittenden in September; and Scott (1887, p. 200) met with the species at Mineral Creek in March, October, and November. These seem to be the only Arizona records. It is highly probable that Cooper's (1861, p. 122) reference to *Spizella pallida* as common in April in the vicinity of Fort Mohave, really pertains to *S. breweri*.

236. ***Spizella breweri* Cassin.**

BREWER SPARROW.

Synonyms—*Spizella pallida*, part; *Spizella pallida* var. *breweri*.

Status—Reported as breeding at Fort Whipple (Coues, 1866a, p. 87), and in the Huachuca Mountains (Willard, 1908b, p. 206), and as probably breeding on the Desert of the Little Colorado (Merriam, 1890, p. 96). In the northern and central parts of the state it is a summer visitant only, but in the lowlands of southern Arizona it remains in numbers throughout the winter, as is also the case along the Colorado River from The Needles southward (Mus. Vert. Zool.).

237. ***Spizella atrogularis* (Cabanis).**

BLACK-CHINNED SPARROW.

Synonym—*Spizella evura*.

Status—There are but few records of the occurrence of this species in Arizona. Found at Fort Whipple as a rare summer visitant but common migrant (Coues, 1866a, p. 87); specimens secured at Mineral Creek in October, and in the Santa Catalina Mountains in February (Scott, 1887, p. 200); found breeding in the Hualpai Mountains at 6000 feet (Stephens, 1903, p. 103); and noted on one occasion in the Huachuca Mountains in April (Swarth, 1904b, p. 40).

238. **Junco hyemalis hyemalis** (Linnaeus).

## SLATE-COLORED JUNCO.

Status—Has been reported in winter from many scattered points: Fort Whipple, Fort Mohave, Santa Catalina Mountains, Huachuca Mountains, Williams, etc. Never at all common, but usually found in flocks composed of the various species of juncos wintering in the region.

239. **Junco montanus** Ridgway.

## MONTANA JUNCO.

Synonym—*Junco hyemalis montanus*.

Status—"In winter south to Arizona (Tucson)" (Ridgway, 1901, p. 290). I know of no other record.

240. **Junco oreganus thurberi** Anthony.

## SIERRA JUNCO.

Synonyms—*Junco oreganus*, part; *Junco hyemalis thurberi*.

Status—As this species has been found in abundance in winter in the Huachuca Mountains, of extreme southeastern Arizona (Swarth, 1904b, p. 40) it will doubtless prove to be a common winter visitant in all suitable places west of that point. There is record of a specimen from Fort Whipple (Ridgway, 1901, p. 288). There is a specimen in the Museum of Vertebrate Zoology (no. 4143) taken by J. G. Cooper at Fort Mohave, December 24, 1860.

241. **Junco oreganus shufeldti** Coale.

## SHUFELDT JUNCO.

Synonyms—*Struthus oreganus*; *Junco oreganus*, part; *Junco hyemalis oregonus*; *Junco connectens*; *Junco hyemalis connectens*.

Status—A common winter visitant reported from all parts of Arizona, but generally favoring the mountains and the foothill regions, rather than the more open valleys. Nearly all of the numerous records of *Junco oreganus* in Arizona are considered by Ridgway (1901, p. 285) to pertain to this subspecies.

242. **Junco mearnsi** Ridgway.

## PINK-SIDED JUNCO.

Synonyms—*Junco annectens*; *Junco ridgwayi*, part; *Junco hyemalis mearnsi*.

Status—A common winter visitant in northern and eastern Arizona, reported from the following localities: Fort Whipple, Prescott, Williams, Santa Catalina Mountains, Huachuca Mountains, and Sulphur Spring Valley.

243. **Junco caniceps** (Woodhouse).

## GRAY-HEADED JUNCO.

Synonyms—*Struthus caniceps*, part; *Junco cinereus caniceps*; *Junco ridgwayi*, part; *Junco phaeonotus caniceps*.

Status—A common winter visitant in the Upper Sonoran and Transition zones at least as far north as Fort Whipple. Reported from numerous localities: Fort Whipple, Williams, and the Chiricahua, Santa Catalina, Huachuca, Dragoon and Whetstone mountains.

244. ***Junco phaeonotus palliatus* Ridgway.**

## ARIZONA JUNCO.

Synonyms—*Junco cinereus*; *Junco cinereus palliatus*.

Status—Common resident of the Transition zone of eastern Arizona, from Mount Graham southward. Reported from the Graham, Santa Catalina, Santa Rita, Chiricahua, Pinal, Huachuca, and Whetstone mountains. It is strictly a resident in the higher mountains, there being apparently not even a local migration downward into the valleys during the winter months.

245. ***Junco phaeonotus dorsalis* Henry.**

## RED-BACKED JUNCO.

Synonyms—*Struthus caniceps*, part; *Junco cinereus dorsalis*; *Junco dorsalis*.

Status—Resident in the high mountains of northeastern Arizona, reported from San Francisco Mountain, Grand Cañon of the Colorado, White Mountains, and Mogollon Mountains.

246. ***Amphispiza bilineata deserticola* Ridgway.**

## DESERT SPARROW.

Synonyms—*Poospiza bilineata*; *Amphispiza bilineata*.

Status—Common summer resident in the arid Lower Sonoran plains, of southern and western Arizona, north to Forts Verde, Whipple, and Mohave; also reported in summer from the Desert of the Little Colorado and Kean Cañon, in northeastern Arizona. Remains through the winter in some of the warmer southern valleys.

247. ***Amphispiza nevadensis nevadensis* (Ridgway).**

## SAGE SPARROW.

Synonyms—*Poospiza belli*; *Poospiza belli*, var. *nevadensis*; *Amphispiza belli nevadensis*; *Amphispiza belli cinerea*.

Status—A fairly common winter visitant, reported from various parts of the state: Little Colorado River, December (Kennerly, 1859, p. 29); Fort Whipple (Coues, 1866a, p. 86); San Pedro River and Tucson, December (Scott, 1887, p. 203); Fort Huachuca, winter (Fisher, 1904, p. 80). Price's (1899, p. 93) record of *Amphispiza belli cinerea*? at Yuma in midwinter also probably pertains to this species. As young in the spotted plumage were taken at Flagstaff, on the Desert of the Little Colorado, and at the Grand Cañon of the Colorado (Merriam, 1890, p. 96), the species may breed in this general region.

248. ***Peucaea botterii* (Sclater).**

## BOTTERI SPARROW.

Synonyms—*Peucaea cassinii*, part; *Peucaea aestivalis* var. *arizonae*; *Peucaea arizonae*.

Status—Found only in the Lower Sonoran valleys of southeastern Arizona; reported north to Camp Grant (Henshaw, 1874, p. 118), west to the valley of the Santa Cruz River (Stephens, 1885, p. 226). Possibly resident, but all the records thus far published are of observations made during the summer months.

249. ***Peucaea cassini* (Woodhouse).**

CASSIN SPARROW.

Synonym—*Zonotrichia cassini*.

Status—Locally abundant during the summer in the Lower Sonoran valleys of southeastern Arizona, recorded from over practically the same area as that occupied by *Peucaea botterii*. Ranges north to Fort Grant (Henshaw, 1875b, p. 285), west as far as the Santa Cruz Valley (Stephens, 1885, p. 226). I know of no instance of its having been found actually breeding, though taken throughout the summer, nor do I know of any midwinter record.

250. ***Aimophila carpalis* (Cooper).**

RUFIOUS-WINGED SPARROW.

Synonym—*Peucaea carpalis*.

Status—Found only in southeastern Arizona, where it has been reported from Tucson, Fort Lowell, the foothills of the Santa Catalina Mountains (up to 4500 feet), and the Santa Cruz Valley. Probably resident, as specimens have been taken in January as well as in midsummer.

251. ***Aimophila ruficeps scotti* (Sennett).**

SCOTT SPARROW.

Synonyms—*Peucaea ruficeps boucardi*; *Peucaea homochlamys*; *Peucaea ruficeps scotti*.

Status—Common resident of the Upper Sonoran foothills of southeastern Arizona. Occurs in all the ranges south of Camp Apache (Henshaw, 1875b, p. 289), and west of the Santa Cruz River: Santa Catalina, Santa Rita, Chiricahua, Huachuca mountains, etc. Has also been found in the Grand Cañon of the Colorado, below 4000 feet, and on the Desert of the Little Colorado (Merriam, 1890, pp. 40, 97), in extreme northern Arizona.

252. ***Melospiza melodia saltonis* Grinnell.**

DESERT SONG SPARROW.

Synonyms—*Zonotrichia fallax*; *Melospiza fallax*; *Melospiza melodia*; *Melospiza fasciata fallax*; *Melospiza cinerea fallax*; *Melospiza melodia fallax*.

Status—Common resident of the Lower Sonoran river valleys. Occurs along the Colorado River for nearly its entire extent in the state, being reported from below Yuma and as far up the river as Moencopie in northeastern Arizona (Merriam, 1890, p. 97). Occurs in suitable localities (which are not numerous) in southern Arizona, along the valley of the Gila River and its tributaries (Santa Cruz River, San Pedro River, etc.). I know of no song sparrow records from the high plateau region of central Arizona.

253. ***Melospiza melodia fallax* (Baird).**

MOUNTAIN SONG SPARROW.

Synonyms—*Melospiza melodia* var. *heermanni*; *Melospiza fasciata montana*; *Melospiza melodia montana*.

Status—A fairly common winter visitant or transient. Specimens have been taken as follows: San Pedro River and Tucson, winter (Scott, 1887, p. 204); Sulphur Spring Valley, March (Osgood, 1903, p. 149); San Francisco Mountain, August (Merriam, 1890, p. 97); and Colorado River at Needles, mouth of Bill Williams River, and Riverside Mountain, February and March, 1910 (Mus. Vert. Zool.). Probably a migrant in northern Arizona, and a winter visitant along the lower Colorado River, and in the southern valleys.

254. **Melospiza melodia merrilli** Brewster.

MERRILL SONG SPARROW.

Status—Recorded from Apache, Arizona, in winter (Ridgway, 1901, p. 361).

255. **Melospiza lincolni lincolni** (Audubon).

LINCOLN SPARROW.

Synonym—*Peucaea lincolni*.

Status—Of fairly common occurrence as a migrant in suitable places; generally distributed and reported from many scattered localities. Probably remains in the valley of the lower Colorado River throughout the winter, though there is no definite data establishing this as a fact. Possibly a winter visitant in other parts of southern Arizona also. Found on the Bill Williams River in February (Kennerly, 1859, p. 29).

256. **Passerella iliaca schistacea** Baird.

SLATE-COLORED FOX SPARROW.

Synonym—*Passerella townsendi schistacea*.

Status—A rare migrant and winter visitant. There are published records of but four specimens from Arizona: one from a point forty miles south of Camp Apache, September 1, 1873 (Henshaw, 1875b, p. 293); one from Tucson, February, 1880 (Brewster, 1882, p. 197); one from San Francisco Mountain, September 29, 1889 (Merriam, 1890, p. 97); and one from the Huachuca Mountains, November 20, 1894 (Fisher, 1904, p. 81).

257. **Pipilo maculatus montanus** Swarth.

MOUNTAIN TOWHEE.

Synonyms—*Pipilo arctica*; *Pipilo erythrophthalmus*; *Pipilo oregonus*; *Pipilo megalonyx*; *Pipilo maculatus megalonyx*.

Status—Common resident of the Upper Sonoran and Transition zones in northern and eastern Arizona. Its westernmost limits might be indicated by a line drawn from the Santa Rita and Santa Catalina mountains in the southeast, to the Hualpai Mountains in the northwest. Apparently strictly resident where found, there being no migratory movement into the lowlands in winter. There are no records from the valley of the lower Colorado River.

258. ***Pipilo maculatus curtatus* Grinnell.**

NEVADA TOWHEE.

Status—Rather uncommon winter visitant along the lower Colorado River; specimens taken between Needles and Ehrenberg, in February and March, 1910 (Mus. Vert. Zool.), and one at Fort Yuma January 23, 1913 (collection of A. B. Howell). The capture of these specimens constitutes the only records I know of regarding the occurrence of any form of *Pipilo maculatus* in the lower Colorado Valley. (see Grinnell, 1911, p. 309).

259. ***Pipilo fuscus mesoleucus* Baird.**

CAÑON TOWHEE.

Synonym—*Pipilo mesoleucus*.

Status—Common resident in the Upper Sonoran zone, and in Lower Sonoran also in parts of southern Arizona. All of the published records are from points south and east of the Mogollon divide; but the species is absent from the exceedingly arid southwestern corner of Arizona, and thus seems to occupy a belt extending across the state from Fort Mohave in the northwest (Fisher, 1893b, p. 105), south to the extreme southeastern corner. Coues' (1866c, p. 262) record of the occurrence of the species on the lower Colorado River lacks confirmation. Zonally it occupies an intermediate region between *Pipilo m. montanus* and *P. aberti*, at places ascending or descending slightly into the habitats of those species. In no one spot, however, are all three to be found.

260. ***Pipilo aberti* Baird.**

ABERT TOWHEE.

Status—Common resident of the valley of the Colorado River, and its tributaries in western and southern Arizona. Abundant in the Lower Sonoran river valleys of the south (Gila, Santa Cruz, San Pedro, etc.) extending as far north as Fort Grant (Coues, 1868, p. 84) and Fort Whipple (Coale, 1894, p. 218). Along the Colorado it has been found to the extreme northwestern corner of the state: confluence of the Beaverdam and Virgin rivers (Fisher, 1893b, p. 105), but no farther to the eastward.

261. ***Oreospiza chlorura* (Audubon).**

GREEN-TAILED TOWHEE.

Synonyms—*Fringilla blandingiana*; *Zonotrichia blandingiana*; *Pipilo chlorura*; *Atlapetes chlorurus*.

Status—A common migrant, occurring indifferently on Boreal mountain tops or on the arid, semi-desert plains. Reported in winter from the Colorado Valley (Cooper, 1870, p. 248), and as an occasional winter visitant in the Santa Catalina Mountains in extreme southern Arizona (Scott, 1887, p. 204). Specimens in the collection of F. S. Daggett taken at Fort Lowell in October, November, December and January.

262. **Cardinalis cardinalis superbus** Ridgway.

## ARIZONA CARDINAL.

Synonyms—*Cardinalis virginianus*; *Cardinalis igneus*; *Cardinalis virginianus igneus*; *Cardinalis superbus*.

Status—Fairly abundant in the valleys of extreme southeastern Arizona, where it is probably resident throughout the year. One specimen in the collection of F. S. Daggett, no. 6475, male, Tucson, January 10, 1908. There is record of one from the "Colorado River, Arizona", November 30, 1871 (Ridgway, 1885c, p. 344). Aside from this it is reported only from localities in the valleys of the Santa Cruz and San Pedro rivers.

263. **Pyrrhuloxia sinuata sinuata** (Bonaparte).

## ARIZONA PYRRHULOXIA.

Synonym—*Pyrrhuloxia sinuata beckhami*.

Status—Resident in the Lower Sonoran valleys of southern Arizona. Common in the vicinity of Tucson; also reported from Fort Grant, Yuma, Quijotoa, and the San Pedro and Santa Cruz rivers.

264. **Zamelodia ludoviciana** (Linnaeus).

## ROSE-BREASTED GROSBEAK.

Status—Only one record, that of an adult male taken by R. D. Lusk in the Huachuca Mountains, June 29, 1894 (Swarth, 1904b, p. 44). The specimen is now in the Swarth collection.

265. **Zamelodia melanocephala melanocephala** (Swainson).

## BLACK-HEADED GROSBEAK.

Synonyms—*Guiraca melanocephala*; *Goniaphea melanocephala*; *Hedymeles melanocephalus*; *Habia melanocephala*.

Status—Breeds commonly in the Transition zone of the higher mountains throughout the state; and during the migrations it is of general occurrence elsewhere as well. There is no authenticated instance of its occurrence through the winter months.

266. **Guiraca caerulea lazula** (Lesson).

## WESTERN BLUE GROSBEAK.

Synonyms—*Guiraca caerulea*; *Goniaphea coerulea*; *Guiraca caerulea curhyncha*.

Status—Restricted almost entirely to the hot Lower Sonoran river valleys. A common summer visitant along the San Pedro and Santa Cruz rivers, and about Tucson. The various records from the Colorado River are none of them of birds actually found breeding, though there can be little doubt but that they do so: Fort Mohave, May; Yuma, May; confluence of Beaverdam and Virgin rivers, May; Big Sandy River, July. In central Arizona it extends north to Fort Apache and Fort Grant (Henshaw, 1875b, p. 298) and to Fort Whipple (Coues, 1866a, p. 88).

267. *Passerina amoena* (Say).

## LAZULI BUNTING.

Synonyms—*Spiza amoena*; *Cyanospiza amoena*.

Status—Of abundant occurrence as a migrant, and quite generally distributed, though I know of no records of its occurrence in northeastern Arizona. Probably breeds, though definite data is lacking. Coues (1866a, p. 89) reports it as an uncommon summer visitant at Fort Whipple, and Scott (1887, p. 205) states that it has been found breeding near Tucson. In neither case is more detailed information given.

268. *Passerina versicolor pulchra* Ridgway.

## BEAUTIFUL BUNTING.

Synonym—*Passerina versicolor*.

Status—An adult female taken by F. Stephens at Crittenden, near the Santa Rita Mountains, July 14, 1884 (Brewster, 1885b, p. 198). Not otherwise known to occur in Arizona.

269. *Passerina ciris* (Linnaeus).

## PAINTED BUNTING.

Synonym—*Cyanospiza ciris*.

Status—Of occasional occurrence in extreme southeastern Arizona in late summer and during the fall migration. Henshaw (1875b, p. 301) reported it as present in considerable numbers at Fort Bowie and Fort Crittenden in August and September, 1874. One specimen taken in the Huachuca Mountains, July 12, 1902 (Swarth, 1904b, p. 46). There are three specimens in the Museum of Vertebrate Zoology taken at Fort Huachuca on August 29 and September 12 and 13, 1884, respectively.

270. *Spiza americana* (Gmelin).

## DICKCISSEL.

Synonym—*Euspiza americana*.

Status—Only known to occur in Arizona as observed by Henshaw (1875b, p. 295), who found it in small numbers and secured specimens on the San Pedro River, at Fort Crittenden and at Fort Lowell, in August and September, 1873 and 1874; and from a specimen taken by Brown at Tucson, September 11, 1884 (Scott, 1887, p. 205).

271. *Calamospiza melanocorys* Stejneger.

## LARK BUNTING.

Synonym—*Calamospiza bicolor*.

Status—An abundant migrant and winter visitant on the plains of southern and western Arizona. There are numerous recorded instances of its occurrence at points in the south—Tombstone, San Pedro Valley, Tucson, etc., north to Fort Grant; and it also occurs in lesser numbers along the Colorado River, but apparently not in the extreme southwestern corner, the vicinity of Yuma. Not reported south of Cibola, on the Colorado River (Mus. Vert. Zool.), nor west of Agua Caliente, on the Gila River (Swarth, MS). Neither do I know of any instance of its occurrence in northern Arizona—north of the Mogollon Divide—though it should occur in that region as a migrant.

272. ***Piranga ludoviciana* (Wilson).**

WESTERN TANAGER.

Synonym—*Pyrranga ludoviciana*.

Status—Summer visitant in the Transition zone and upward, of common occurrence in the north: San Francisco Mountain (Merriam, 1890, p. 40); Mogollon Mountains (Mearns, 1890a, p. 260). In diminishing numbers to the southward, as far as the Santa Catalina Mountains (Scott, 1888, p. 29), and Huachuca Mountains (Swarth, 1904b, p. 47). These latter points, where it is of rare occurrence in the summer, probably indicate the extreme southern limits of the breeding range of the species. Common and generally distributed during the migrations.

273. ***Piranga hepatica* Swainson.**

HEPATIC TANAGER.

Synonyms—*Pyrranga azarac*; *Pyrranga hepatica*, part.

Status—Common summer visitant in the Transition zone throughout the state. Reported in summer from San Francisco Mountain, the Mogollon, Santa Catalina, Santa Rita, Huachuca, Chiricahua, and White mountains, and at Fort Whipple; and as a migrant from various intervening points. A single specimen was taken in the Hualpai Mountains, July 8, 1902 (Stephens, 1903, p. 104), and one was seen at the confluence of the Beaverdam and Virgin rivers, in extreme northwestern Arizona, May 9, 1891 (Fisher, 1893b, p. 109).

274. ***Piranga rubra cooperi* Ridgway.**

COOPER TANAGER.

Synonyms—*Pyrranga aestiva*; *Pyrranga cooperi*; *Pyrranga aestiva cooperi*; *Pyrranga hepatica*, part.

Status—Common summer visitant in the Lower Sonoran zone of southern and western Arizona, principally along the hot river valleys of the Colorado and its tributaries. Breeds along the Colorado as far north as Fort Mohave (Cooper, 1870, p. 142), in eastern Arizona north to San Francisco River, in Graham County (Henshaw, 1875b, p. 239), and to the vicinity of Tucson.

275. ***Progne subis subis* (Linnaeus).**

PURPLE MARTIN.

Synonyms—*Progne purpurea*; *Progne subis hesperia*.

Status—Breeds commonly in some sections, but there is not at hand data to indicate the details of its distribution through the state. It is known to be a summer visitant at Fort Whipple, in the Upper Sonoran zone (Coues, 1866a, p. 72), in the Transition of the Mogollon Mountains (Mearns, 1890a, p. 260), and in the Lower Sonoran at Tucson (Swarth, 1905a, p. 49). Reported from other points as a migrant only.

276. ***Petrochelidon lunifrons lunifrons* (Say).**

CLIFF SWALLOW.

Synonyms—*Hirundo lunifrons*; *Petrochelidon lunifrons tachina*.

Status—A common summer visitant, where suitable conditions prevail,

throughout the state, except along the southeastern boundary, where it is replaced by *P. l. melanogastra*. The cliff swallow has been found breeding abundantly at various scattered points—Fort Whipple, Little Colorado River, Bill Williams River, Fort Verde, and at several places on the Colorado River between Needles and Yuma. Breeding birds from Fort Verde have been referred to *P. l. tachina* (Miller, 1906, p. 177).

277. ***Petrochelidon lunifrons melanogastra*** (Swainson).

MEXICAN CLIFF SWALLOW.

Synonym—*Petrochelidon melanogaster*.

Status—Occurs as a summer visitant along the Mexican boundary of extreme southeastern Arizona, as far west as Nogales (Mearns, 1901, p. 177). The northern limits of its range have not yet been ascertained.

278. ***Hirundo erythrogastra*** Boddaert.

BARN SWALLOW.

Synonyms—*Hirundo rufa*; *Hirundo horreorum*; *Chelidon erythrogaster*.

Status—Of rare and local occurrence. The only breeding records known to me are as follows: Tucson and the Santa Catalina Mountains, up to 5,000 feet (Scott, 1888, p. 31); Elgin, Santa Cruz County (Breninger, 1898a, p. 117); San Pedro River (Swarth, 1904b, p. 48). There are singularly few records of its occurrence as a migrant.

279. ***Iridoprocne bicolor*** (Vieillot).

TREE SWALLOW.

Synonyms—*Hirundo bicolor*; *Tachycineta bicolor*.

Status—I know of no instance of this species having been found breeding at any point in Arizona, and it has been observed but seldom as a migrant. Reported from Cienega Station in April (Brewster, 1882, p. 146), from Tucson in March (Scott, 1888, p. 31), and from the Dragoon Mountains in May (Osgood, 1903, p. 150).

280. ***Tachycineta thalassina lepida*** Mearns.

NORTHERN VIOLET-GREEN SWALLOW.

Synonyms—*Hirundo thalassina*; *Herse thalassina*; *Tachycineta thalassina*.

Status—A common summer visitant of high Transition throughout Arizona. Reported from numerous localities—mountains near Fort Whipple, Santa Catalina Mountains, Mogollon Mountains, Huachuca Mountains, etc. Of general distribution during the migrations.

281. ***Riparia riparia*** (Linnaeus).

BANK SWALLOW.

Synonyms—*Cotyle riparia*; *Clivicola riparia*.

Status—Apparently of rare occurrence. Has been seen in summer at Fort Whipple (Coues, 1866a, p. 72), and in the vicinity of Tucson (Scott, 1888, p. 31) and the Santa Cruz River (Swarth, 1905a, p. 49).

282. **Stelgidopteryx serripennis** (Audubon).

ROUGH-WINGED SWALLOW.

Synonym—*Cotyle serripennis*.

Status—Though there are numerous instances of the occurrence of this species as a migrant in various parts of the state, breeding records are too few to permit a definite statement as to the region occupied during the nesting season. Reported as breeding at Fort Whipple (Coes, 1866a, p. 72), Cienega Station, southeastern Arizona (Brewster, 1882, p. 146), along the Santa Cruz and San Pedro rivers (F. C. Willard, MS), and Tucson, and at points on the Colorado River between Ehrenberg and Yuma (Mus. Vert. Zool). Also observed at Fort Mohave, Gila Bend, confluence of Beaverdam and Virgin rivers, Fort Verde, Mellen, Pima Indian Reservation, Keam Cañon, and the Sulphur Spring Valley. Seen in February on the Colorado River (Kennerly, 1859, p. 24), and at Fort Mohave (Cooper, 1870, p. 110), so it may be found to occasionally pass the winter this far north.

283. **Bombycilla garrula** (Linnaeus).

BOHEMIAN WAXWING.

Synonym—*Ampelis garrulus*.

Status—A rare midwinter straggler from the north. Cooper (1861, p. 122) secured a single specimen at Fort Mohave, January 10, 1861, the only occasion on which the species has been observed in Arizona. This bird, an adult female, is now number 4207, Museum of Vertebrate Zoology.

284. **Bombycilla cedrorum** Vieillot.

CEDAR WAXWING.

Synonym—*Ampelis cedrorum*.

Status—Of rare and irregular occurrence. Henshaw (1875b, p. 299) secured a specimen thirty miles south of Fort Apache, September 11, 1873, under circumstances indicating that it may have been breeding. Otherwise noted during the migrations and in winter, at a few scattered localities: Galeyville, Cochise County, January; Tucson, March, May and June; Grand Cañon, September; Huachuca Mountains, April, May, October.

285. **Phainopepla nitens** (Swainson).

PHAINOPEPLA.

Synonyms—*Ptiliogonys nitens*; *Cichlopsis nitens*.

Status—Common summer visitant in the Lower Sonoran of southern and western Arizona. Reported from many points, north as far as Fort Apache (in August, not necessarily a breeding record), Fort Whipple, and Fort Mohave. Remains through the winter locally in southern Arizona, and along the Colorado River. In the late summer there is a dispersal of individuals into higher altitudes, and possibly to more northern localities, than are occupied during the nesting time. Found breeding at Fort Mohave in February (Fisher, 1893b, p. 113).

286.

**Lanius borealis** Vieillot.

NORTHERN SHRIKE.

Synonyms—*Collyrio borealis*; *Collurio borealis*.

Status—Only one record, that of a specimen secured by Coues (1866a, p. 73) at Fort Whipple, in February, 1865.

287.

**Lanius ludovicianus excubitorides** Swainson.

WHITE-RUMPED SHRIKE.

Synonyms—*Lanius ludovicianus*; *Collyrio excubitorides*; *Collurio ludovicianus* var. *excubitorides*; *Collurio excubitoroides*.

Status—Found in the Lower Sonoran zone of southern Arizona, along the Colorado River, and the Desert of the Little Colorado in northeastern Arizona. Apparently restricted to the Lower Sonoran zone in the breeding season but ranging into Upper Sonoran in late summer and fall: one specimen, Fort Whipple, September 4, 1864 (Coues, 1866a, p. 73); foothills of the Huachuca Mountains, October (Swarth, 1908, p. 115). Not known to occur in the high plateau region of central Arizona, and but sparsely distributed in the region where it is found.

288.

**Vireosylva olivacea** (Linnaeus).

RED-EYED VIREO.

Synonym—*Vireo olivaceus*.

Status—But a single record, that of a specimen secured by Lusk in the Huachuca Mountains, May 20, 1895. This specimen is now in the Swarth collection (Swarth, 1904b, p. 49).

289.

**Vireosylva gilva swainsoni** (Baird).

WESTERN WARBLING VIREO.

Synonyms—*Vireo gilvus*; *Vireo swainsoni*; *Vireo gilvus swainsoni*.

Status—A common summer visitant of the Upper Sonoran and Transition zones of northern and central Arizona: Fort Whipple (Coues, 1866a, p. 73); San Francisco Mountain (Merriam, 1890, p. 98). Of rare occurrence south of the central plateau region, but has occasionally been found breeding at the extreme southern boundary of the state: Santa Catalina Mountains (Scott, 1888, p. 32); Huachuca Mountains (Willard, 1908c, p. 230). Abundant and of general distribution during the migrations.

290.

**Lanivireo solitarius cassini** (Xantus).

CASSIN VIREO.

Synonyms—*Vireo solitarius*; *Vireosylva solitaria*; *Vireo solitarius cassini*.

Status—A migrant, of common occurrence and general distribution. Reported from numerous localities in various parts of the state, but not from the desert region of the northeast corner. Specimens have been taken at Forts Whipple, Mohave, Apache, and Crittenden, and also at San Francisco Mountain, Mount Graham, and the Santa Rita, Santa Catalina, and Huachuca mountains.

291. **Lanivireo solitarius plumbeus** (Coues).

## PLUMBEOUS VIREO.

Synonyms—*Virco plumbeus*; *Vireosylva plumbea*; *Virco solitarius plumbeus*.

Status—Common summer visitant of the Transition zone. Reported from San Francisco Mountain, the Mogollon, Santa Catalina, Santa Rita, Huachuca, and Hualpai mountains, Forts Whipple and Apache, and is undoubtedly to be found in all the higher mountain ranges of the state.

292. **Vireo huttoni stephensi** Brewster.

## STEPHENS VIREO.

Synonym—*Virco huttoni*.

Status—Found in the mountain ranges of southeastern Arizona, in the live oak belt and along the cañon streams, ranging upward to the lower edge of Transition. Probably resident, but nowhere very abundant. Reported from the Chiricahua, Santa Catalina, Santa Rita, and Huachuca mountains, and also, the westernmost record, from the Quijotoa Range (Scott, 1888, p. 32).

293. **Vireo belli arizonae** Ridgway.

## ARIZONA VIREO.

Synonyms—*Virco bellii*; *Virco pusillus*; *Virco belli pusillus*.

Status—Common summer visitant in southern and western Arizona. Found along the Colorado River at least as far north as Fort Mohave (Cooper, 1861, p. 122) and the Big Sandy (Stephens, 1903, p. 104). In eastern Arizona it breeds abundantly in the valleys of the Santa Cruz and San Pedro, as in all probability it does along the Gila River also. The northernmost points to which it has been traced in central Arizona are the Gila River, Graham County, in September (Henshaw, 1875b, p. 225), and a point fifty miles south of Fort Whipple, breeding (Coues, 1866a, p. 76).

294. **Vireo vicinior** Coues.

## GRAY VIREO.

Status—A summer visitant, reported thus far from a few scattered localities in the northern and eastern parts of the state. Coues (1866a, p. 75) secured a single specimen, the type of the species, at Fort Whipple. Henshaw (1875b, p. 227) took migrating birds at Camp Bowie in August, and at Camp Lowell in September, and Stephens (1878, p. 93) found it on the Gila River, presumably about at the Arizona-New Mexico boundary, and also near Tucson in April (Brewster, 1882, p. 142). Apparently the only positive published breeding record for Arizona is that of Scott (1885a, p. 321), who reported the species as a common summer visitant on the eastern slope of the Santa Catalina Mountains, ranging from 2800 to 4000 feet. Merriam (1890, p. 40) found it at the Grand Cañon of the Colorado in September, and Fisher (1903, p. 35) at Kearn Cañon in July and August, and it may be presumed to breed at both places.

295. **Protonotaria citrea** (Boddaert).

PROTHIONOTARY WARBLER.

Status—Only one record, that of a specimen taken by E. W. Nelson at Tucson, May 1, 1884 (Cooke, 1904, p. 23).

296. **Vermivora luciae** (Cooper).

LUCY WARBLER.

Synonyms—*Helminthophaga luciae*; *Helminthophila luciae*.

Status—An exceedingly abundant summer visitant in the low river valleys of southern and western Arizona. Common in the valleys of the Santa Cruz and San Pedro, along the Gila (probably not above its junction with the San Pedro), and along the Colorado. Ranges north along the Colorado to Fort Mohave at least, in central Arizona to Fort Whipple. Its northern boundary is probably determined by the rise of the country toward the Central Plateau Region. Restricted almost entirely to the Lower Sonoran zone, but in a few places it ranges into Upper Sonoran: west slope of the Santa Rita Mountains (Swarth, 1905a, p. 81); west slope of the Huachuca Mountains (Willard, 1908b, p. 206). Not reported from east of the San Pedro River.

297. **Vermivora virginiae** (Baird).

VIRGINIA WARBLER.

Synonyms—*Helminthophaga virginiae*; *Helminthophila virginiae*.

Status—An abundant migrant, and a fairly common summer visitant in the Transition zone of some, probably all, of the higher mountain ranges. It has been found in the summer months in the White, Santa Catalina, Huachuca, and San Francisco mountains. Rare in the Hualpai Mountains, where Stephens (1903, p. 104) saw several in June. Of occasional occurrence in the low valleys during the migrations.

298. **Vermivora rubricapilla gutturalis** (Ridgway).

CALAVERAS WARBLER.

Synonyms—*Helminthophaga ruficapilla*; *Helminthophila ruficapilla*; *Helminthophila ruficapilla gutturalis*; *Helminthophila rubricapilla gutturalis*.

Status—Abundant and generally distributed during the migrations. Reported from the valley of the Colorado River (Mus. Vert. Zool.), from San Francisco Mountain in the north, and from the Huachuca, Santa Rita and Santa Catalina mountains, and the valley of the San Pedro River, in southern Arizona.

299. **Vermivora celata celata** (Say).

ORANGE-CROWNED WARBLER.

Synonyms—*Helminthophila celata*; *Vermivora celata orestera*.

Status—But few records from Arizona. Reported from Mount Graham (breeding), San Francisco Mountains, San Pedro River, Adonde, Tucson, Fort Huachuca, and Bisbee (*V. c. orestera* Oberholser, 1905, p. 243); from the Huachuca Mountains and San Pedro River in April and September (Swarth, 1904b, p. 52); and from the Colorado Valley (Needles, Cibola, Picacho, and Pilot Knob) from February to May (Mus. Vert. Zool.).

300. **Vermivora celata lutescens** (Ridgway).

## LUTESCENT WARBLER.

Synonyms—*Helminthophaga celata*; *Helminthophila celata lutescens*.

Status—An abundant migrant, occurring in all parts of Arizona. Has been found at every point where collecting has been carried on in the spring and fall.

301. **Peucedramus olivaceus** (Giraud).

## OLIVE WARBLER.

Synonym—*Dendroica olivacea*.

Status—Breeds in the Transition zone of the mountains of southern and central Arizona. Has been found in the Huachuca, Chiricahua, Santa Catalina, Mogollon and White mountains, and on Mount Graham, and there are other high ranges at intermediate points where it will also probably be found. It does not appear to be very abundant in any part of its range in Arizona. A few individuals probably remain through the winter, as it has been reported from the Santa Catalina Mountains, at 10,000 feet altitude, November 26-29 (Scott, 1885b, p. 172), and from the Huachuca Mountains at 9000 feet, February 21 (Swarth, 1904b, p. 53).

302. **Dendroica aestiva sonorana** Brewster.

## SONORA YELLOW WARBLER.

Synonyms—*Dendroica aestiva*, part; *Dendroica aestiva morcomi*, part.

Status—A common summer visitant in southern and western Arizona, apparently confined almost entirely to the Lower Sonoran river valleys, the Colorado and the Gila, with their tributaries. Has been reported from various points along these streams: Fort Mohave, Yuma, Gila Bend, Tucson, Tombstone, etc.; and occasionally from localities in Upper Sonoran: Santa Catalina Mountains, resident up to 4500 feet (Scott, 1888, p. 34). The northernmost record I have seen from central Arizona is from Fort Verde (Coale, 1894, p. 218). I know of no breeding record of a yellow warbler from any point in Arizona north of the Mogollon Divide; what form it is that migrates through this region I do not know (*Dendroica aestiva* Merriam, 1890, p. 98, San Francisco Mountain, etc., August and September; Fisher, 1893b, p. 113, confluence of Beaverdam and Virgin rivers, May; etc.).

303. **Dendroica aestiva brewsteri** Grinnell.

## CALIFORNIA YELLOW WARBLER.

Synonyms—*Dendroica aestiva*, part; *Dendroica aestiva morcomi*, part.

Status—A common migrant in southern Arizona. I have seen specimens from the Huachuca Mountains, in the extreme southeastern portion of the state (Swarth, 1904b, p. 53), and from points on the Colorado River (Mus. Vert. Zool.). These are distinctly *D. a. brewsteri*, as distinguished from *D. a. aestiva* of the eastern United States.

304. ***Dendroica coronata* (Linnaeus).**

## MYRTLE WARBLER.

Status—Four records: One from the Chiricahua Mountains, March 26, 1881 (Brewster, 1882, p. 137); one from Tucson, January 28, 1886 (Scott, 1888, p. 34); Pima Indian Reservation, September, "one seen" (Breninger, 1901a, p. 46); Tucson, one seen January 28, 1912 (Sloanaker, 1913, p. 197).

305. ***Dendroica auduboni auduboni* (Townsend).**

## AUDUBON WARBLER.

Synonym—*Sylvicola audubonii*.

Status—Common summer visitant in high Transition and upward in the mountains of northern Arizona: San Francisco Mountain, Mogollon Mountains, etc. Abundant in winter in the Lower Sonoran valleys of the southern and western parts of the state: Tucson, San Pedro River, Yuma, etc. Winter visitant in the Colorado Valley at least as far north as Fort Mohave. Occasional in winter at Fort Whipple (Coues, 1866a, p. 69). Very abundant and of general distribution during the migrations.

306. ***Dendroica auduboni nigrifrons* Brewster.**

## BLACK-FRONTED WARBLER.

Synonyms—*Dendroica auduboni*, part; *Dendroica nigrifrons*.

Status—Reported from the Huachuca and the Chiricahua mountains, where it is a fairly common summer visitant in the Transition zone. *D. a. auduboni* has been recorded as an uncommon summer visitant in the Santa Catalina Mountains (Scott, 1888, p. 34), but I have seen typical examples of *nigrifrons* (in the collection of F. S. Daggett) taken in these mountains in June, 1906, so that the breeding range of this form extends at least that far north. Probably it includes all the high mountains south of the Mogollon Plateau, but it is impossible at present to indicate exactly the dividing line between the breeding ranges of *nigrifrons* and *auduboni*. From the critical comments made upon *Dendroica auduboni* by Coues in his "List of Birds of Fort Whipple" (1866a, p. 69) it is evident that he collected in that region specimens approximating the characters of *D. a. nigrifrons*.

307. ***Dendroica graciae* Baird.**

## GRACE WARBLER.

Status—A summer visitant in the Transition zone of eastern and central Arizona, apparently least abundant in the extreme southern part of the state. In the Huachuca Mountains it is common during the migrations, but decidedly rare in the breeding season. Reported from the Huachuca, Chiricahua, Santa Catalina, Mogollon, and White mountains, San Francisco Mountain and Fort Whipple. There is no record of its occurrence in the lowlands during the migrations.

308. ***Dendroica nigrescens* (Townsend).**

## BLACK-THROATED GRAY WARBLER.

Status—A common summer visitant in low Transition throughout Arizona. Has been found breeding in the Huachuca, Santa Rita, Whetstone, and Santa Catalina mountains, San Francisco Mountain, and at Fort Whipple. Abundant and generally distributed during the migrations.

300. ***Dendroica virens* (Gmelin).**

BLACK-THROATED GREEN WARBLER.

Status—Only one record for Arizona, that of an adult male secured at Ramsay Cañon, Huachuca Mountains, May 9, 1895 (Fisher, 1904, p. 81).

310. ***Dendroica townsendi* (Townsend).**

TOWNSEND WARBLER.

Status—An abundant migrant at all altitudes, both spring and fall, reported from many scattered localities throughout the state (San Francisco Mountain, Huachuca Mountains, Tucson, Yuma, etc.). Scott (1888, p. 35) took one specimen at Mineral Creek, Pinal County, November 2, 1882, but there are no mid-winter records.

311. ***Dendroica occidentalis* (Townsend).**

HERMIT WARBLER.

Status—An abundant migrant, occurring in all parts of Arizona in the spring and fall. Reported from Fort Whipple, San Francisco Mountain, Huachuca Mountains, Yuma, etc.

312. ***Seiurus noveboracensis notabilis* Ridgway.**

ALASKA WATER-THRUSH.

Synonyms—*Seiurus tenuirostris*; *Seiurus noveboracensis*; *Siurus naevius*.

Status—A rare migrant. The published records are as follows: Rio Colorado, October (Gambel, 1843, p. 261); one specimen, Camp Crittenden, August (Henshaw, 1875b, p. 204); one specimen, adult male, Tucson, May 4 (Brewster, 1882, p. 138); two specimens, Santa Catalina Mountains, 3500 feet, an adult female on September 2, and an adult male on September 3, 1884 (Scott, 1888, p. 35); one specimen, Huachuca Mountains, 5500 feet, August 31, 1903 (Swarth, 1904b, p. 56).

313. ***Oporornis tolmiei* (Townsend).**

MACGILLIVRAY WARBLER.

Synonyms—*Geothlypis macgillivrayi*; *Geothlypis philadelphia* var. *macgillivrayi*; *Geothlypis tolmiei*.

Status—A summer visitant in the higher mountains of central Arizona. Fort Whipple, April to September (Coues, 1866a, p. 70); east central Arizona, "common summer resident" (Henshaw, 1875a, p. 156). Abundant and generally distributed during the migrations.

314. ***Geothlypis trichas occidentalis* Brewster.**

WESTERN YELLOWTHROAT.

Synonym—*Geothlypis trichas*, part.

Status—A common migrant, and, on the lower Colorado River, a winter visitant. May breed in northern Arizona, a summer record from Fort Whipple (Coues, 1866a, p. 69), possibly pertaining to this subspecies. Colorado River below Yuma, December (Price, 1899, p. 93). Huachuca Mountains, migrant (Swarth, 1904b, p. 56).

315. ***Geothlypis trichas scirpicola* Grinnell.**

TULE YELLOWTHROAT.

Synonyms—*Geothlypis trichas*, part; *Geothlypis trichas occidentalis*, part.

Status—Breeds in the valleys of extreme southern Arizona and along the lower Colorado River, but from the generally unfavorable nature of the region outside of the latter district, it occurs in but small numbers, and at widely scattered intervals. Found in summer in the vicinity of Tucson (Scott, 1888, p. 35), on the San Pedro River (Swarth, 1904b, p. 56), and on the lower Colorado River (Mus. Vert. Zool.). For the use of the name *scirpicola* for the breeding yellowthroat of southern Arizona, see Swarth, 1912, p. 71.

316. ***Icteria virens longicauda* Lawrence.**

LONG-TAILED CHAT.

Synonyms—*Icteria viridis*; *Icteria longicauda*.

Status—Abundant summer visitant in the Lower Sonoran river valleys, and through the Upper-Sonoran zone in the lower cañons of the mountain ranges. Found in summer at Fort Mohave, Fort Whipple, Fort Grant, Tucson, Fort Apache, Huachuca Mountains, etc.

317. ***Wilsonia pusilla pileolata* (Pallas).**

PILEOLATED WARBLER.

Synonyms—*Myiodioides pusillus*; *Myiodioides pusillus pileolatus*, part; *Myiodioides pileolatus*; *Sylvania pusilla pileolata*; *Sylvania pusilla*, part.

Status—The only breeding record for Arizona is that of Coues (1866a, p. 71) who reported the species as a common summer visitant about Fort Whipple, where he found it from May to September. It is an exceedingly common migrant in all parts of the state, and one that is found at all altitudes.

318. ***Wilsonia pusilla chryseola* Ridgway.**

GOLDEN PILEOLATED WARBLER.

Synonyms—*Myiodioides pusillus pileolatus*, part; *Sylvania pusilla*, part.

Status—Occurs "during migration southward and eastward to . . . Arizona (Pinal County, September, October; Lowell, April; Fort Verde, May; San Francisco Mountains, August 31; Cienega; Tucson)" (Ridgway, 1902, p. 714). Observed as a common migrant in the Colorado Valley, between Chemehuevis Valley and Potholes in the spring of 1910 (Mus. Vert. Zool.).

319. ***Setophaga ruticilla* (Linnaeus).**

AMERICAN REDSTART.

Status—Its occurrence in Arizona is based upon the record by Scott (1888, p. 36), of two specimens, an adult male taken by himself in the Santa Catalina Mountains, 4500 feet elevation, August 12, 1884, and another taken by Herbert Brown at Tucson

320.

***Setophaga picta* Swainson.**

PAINTED REDSTART.

Status—A common summer visitant in the high mountains of southern and central Arizona, in low Transition and high Upper Sonoran. Found as far north as the Mogollon Mountains and the Tonto Basin (Mearns, 1890a, p. 261). Reported from Camp Apache, Mount Graham, and the Chiricahua, Santa Rita, Huachuca, Santa Catalina, and Whetstone mountains.

321.

***Cardellina rubrifrons* (Giraud).**

RED-FACED WARBLER.

Status—Common summer visitant in the Transition zone of the mountains of southeastern Arizona. The northernmost point to which it has been traced is the Mogollon Mountains (Mearns, 1890a, p. 261), and it has also been found in summer at Fort Apache, Mount Graham, the Santa Catalina, Santa Rita, and Huachuca mountains. There are other high ranges from which there are no reports, where it undoubtedly occurs.

322.

***Anthus rubescens* (Tunstall).**

AMERICAN PIPIT.

Synonyms—*Anthus ludovicianus*; *Anthus pensilvanicus*.

Status—A common winter visitant in the lowlands of southern and western Arizona, reported from various scattered localities—Fort Whipple, Yuma, Tucson, etc. No winter records from points north of the Mogollon Divide. Possibly breeds on San Francisco Mountain, where it was found at timber line in the late summer (Merriam, 1890, p. 99).

323.

***Cinclus mexicanus unicolor* Bonaparte.**

AMERICAN DIPPER.

Synonyms—*Hydrobata mexicana*; *Cinclus mexicanus*.

Status—There are but three definite published statements in regard to the occurrence of the dipper in Arizona. Although Coues (1866a, p. 66) included the species in his list of birds of Fort Whipple, he did not himself meet with it. Henshaw (1875b, p. 159) found it fairly common in summer on some of the streams of the White Mountains; Brewster (1882, p. 76) records a specimen secured in the Chiricahua Mountains, March 20; and one was seen in the Huachuca Mountains, August 4, 1902 (Swarth, 1904b, p. 59).

324.

***Oreoscoptes montanus* (Townsend).**

SAGE THRASHER.

Synonym—*Mimus montanus*.

Status—An abundant winter visitant of the plains and valleys of southern Arizona, reported from many localities between Yuma and the eastern boundary; also along the lower Colorado River. I know of no winter records from points north of the Mogollon Divide. There are no published instances of its breeding in Arizona, though it may be found doing so in the northeastern portion—from the Little Colorado River northward—where Merriam (1890, p. 100) observed it in small numbers in the late summer of 1889.

325. **Mimus polyglottos leucopterus** (Vigors).

## WESTERN MOCKINGBIRD.

Synonyms—*Mimus polyglottus*; *Mimus polyglottus* var. *caudatus*.

Status—A common summer visitant in the Lower Sonoran valleys, and in places extending up into Upper Sonoran. It is permanently resident in the hot valleys of southern Arizona, but there is a vertical migration downward from the foothill regions where it occurs in summer; and possibly an entire departure from northern Arizona during the winter months. Coues (1866a, p. 65) speaks of it as a summer resident only in the vicinity of Fort Whipple, and Osgood (1903, p. 150) mentions its arrival in the Sulphur Spring Valley, Cochise County, on April 15. In the foothills of the Huachuca Mountains it occurs in summer only, while it is reported in February from a point on the San Pedro River, fifteen miles distant and about five hundred feet lower (Willard, 1910c, p. 110). The few records from northern Arizona (Little Colorado River, Keam Cañon, and Hualpai Mountains), are all for the summer months.

Probably a winter visitant only on the Colorado River below Needles (Mus. Vert. Zool.).

326. **Toxostoma rufum** (Linnaeus).

## BROWN THRASHER.

Status—But one record for Arizona, that of a male bird taken in the foothills of the Huachuca Mountains (4500 feet altitude), on October 5, 1907 (Swarth, 1908, p. 115).

327. **Toxostoma curvirostre palmeri** (Cones).

## PALMER THRASHER.

Synonyms—*Toxostoma vetula*; *Harporhynchus curvirostris*; *Harporhynchus curvirostris palmeri*.

Status—A common resident in the Lower Sonoran valleys of southeastern Arizona. Its range has been traced east to the valley of the San Pedro (Brewster, 1882, p. 71), north to the Hassayampa (l. c.) and the Big Sandy (Stephens, 1903, p. 105), to Fort Grant (Coues, 1868, p. 83) and the Salt River Valley.

328. **Toxostoma bendirei** (Coues).

## BENDIRE THRASHER.

Synonyms—*Harporhynchus bendirei*; *Harporhynchus cinereus* var. *bendirei*.

Status—Locally a common resident in the Lower Sonoran valleys of southeastern and northeastern Arizona, but our present knowledge seems to indicate an exceedingly irregular and disconnected range. In southeastern Arizona it is very abundant in the valley of the Santa Cruz, west of the Santa Rita Mountains, while it is almost unknown east of that range. It is common in the plains and valleys stretching northwest of Tucson, as far as Phoenix and along the Gila River at least as far as Gila Bend (Pember, 1892, p. 6). In northern Arizona it has been reported from Keam Cañon in July and August (Fisher, 1903, p. 35), and from Beale Spring in July (Stephens, 1903, p. 105).

329. **Toxostoma lecontei lecontei** Lawrence.

LECONTE THRASHER.

Synonyms—*Harporhynchus lecontei*; *Harporhynchus redivivus lecontei*.

Status—A resident of the arid Lower Sonoran plains of southern and western Arizona. In the valley of the Colorado River north to the extreme northwestern corner of the state (Merriam, 1895, p. 59); east in the valley of the Gila about to Phoenix, Maricopa, Casa Grande, and Picacho Peak (Mearns, 1886b, p. 299); its northwestern limits at the base of the Plateau escarpment (Merriam, l. c.). In southern Arizona it has not been observed at any point east of the valley of the Santa Cruz River.

330. **Toxostoma crissale** Henry.

CRISSAL THRASHER.

Synonym—*Harporhynchus crissalis*.

Status—Common resident, principally in Lower Sonoran; locally abundant but rather irregularly distributed. Ranges north in the valley of the Colorado River as far as the mouth of Diamond Creek, Mohave County (Mearns, 1886b, p. 292); in central Arizona to Fort Verde (Mearns, l. c.). In the valley of the Gila it has been traced east to the mouth of San Carlos Creek (Mearns, l. c.). In southeastern Arizona it is common at Fort Bowie, and in the valleys of the San Pedro and Santa Cruz rivers; in the northwest reported as breeding in the Hualpai Mountains (Stephens, 1903, p. 105). There are no records from northeastern Arizona, and in all probability its range in this direction is limited by the great Mogollon Divide.

331. **Heleodytes brunneicapillus couesi** (Sharpe).

CACTUS WREN.

Synonyms—*Campylorhynchus brunneicapillus*; *Heleodytes brunneicapillus*; *Heleodytes brunneicapillus anthonyi*.

Status—A common resident of the Lower Sonoran zone in southern and western Arizona. Most abundant in the hot valleys of the southern part of the state. In western Arizona ranges as far north as Beale Spring (Stephens, 1903, p. 105); in eastern Arizona there are no records from north of the Gila River.

332. **Salpinctes obsoletus obsoletus** (Say).

ROCK WREN.

Synonyms—*Troglodytes obsoletus*; *Thryothorus obsoletus*.

Status—Has been found in every part of Arizona where observations have been made. In the southern valleys a permanent resident, but in the north probably found in summer only (see Coues, 1866a, p. 77), as also in the higher mountains.

333. **Catherpes mexicanus conspersus** Ridgway.

CAÑON WREN.

Synonyms—*Thryothorus mexicanus*; *Catherpes mexicanus*; *Catherpes mexicanus punctulatus*; *Catherpes mexicanus polioptilus*.

Status—Common resident in suitable localities throughout the state, ranging through Lower and Upper Sonoran into lower Transition. Most abundant in the Upper Sonoran zone of the various mountain ranges, but found also on low, rocky hills in the hot southern valleys, along the Colorado River, and on the deserts of northeastern Arizona.

334. ***Thryomanes bewicki eremophilus*** Oberholser.

DESERT WREN.

Synonyms—*Thryothorus bewickii*; *Thryothorus bewicki leucogaster*; *Thryomanes bewicki leucogaster*; *Thryothorus bewickii murinus*; *Thryothorus bewickii bairdi*; *Thryomanes bewickii bairdi*; *Thryomanes bewickii drymoccus*.

Status—Common resident in the Upper and Lower Sonoran zones of southern, and parts of western, Arizona. Has been reported in summer from the Chiricahua, Huachuca, Santa Rita and Santa Catalina mountains, Santa Cruz River near Tucson, Fort Whipple, the Big Sandy River, and many intermediate points, all south and west of the Mogollon Divide. I have seen no records from Arizona localities north of that range. A winter visitant only in the lower Colorado Valley (Mus. Vert. Zool.).

335. ***Troglodytes aëdon parkmani*** Audubon.

PARKMAN WREN.

Synonyms—*Troglodytes parkmanni*; *Troglodytes domesticus parkmani*; *Troglodytes aëdon*; *Troglodytes aëdon marianae*; *Troglodytes aëdon aztecus*.

Status—A summer visitant in the Transition zone of the higher ranges. Remains through the winter in the valley of the Colorado River, and probably in others of the hot valleys of southern Arizona; generally distributed during the migrations. Has been found in summer in the Santa Catalina, Santa Rita, Huachuca, Mogollon, Hualpai, and San Francisco mountains, and at Fort Whipple.

336. ***Nannus hiemalis pacificus*** (Baird).

WESTERN WINTER WREN.

Synonym—*Olbiorchilus hiemalis pacificus*.

Status—But one published record for Arizona, that of a specimen taken in the Huachuca Mountains, April 2, 1902 (Swarth, 1904b, p. 60). There is a specimen in the Field Museum of Natural History, Chicago (no. 8140) labelled "Grand Cañon, March, 1887."

337. ***Telmatodytes palustris plesius*** (Oberholser).

WESTERN MARSH WREN.

Synonyms—*Cistothorus palustris*; *Telmatodytes palustris*; *Cistothorus palustris* var. *paludicola*; *Cistothorus palustris plesius*.

Status—Possibly a summer visitant at suitable points, but the only definite record I have seen of a marsh wren as such is from Fort Whipple, where Coues (1866a, p. 78) found it a common summer resident. There are singularly few published references to the species, even as a migrant in Arizona: Tucson, a rare migrant (Scott, 1888, p. 165); Moencopie, September (Merriam, 1890, p. 100); Sulphur Spring, Cochise County, March (Osgood, 1903, p. 151); Colorado River, March, 1910 (Mus. Vert. Zool.).

338. *Certhia familiaris albescens* Berlepsch.

MEXICAN CREEPER.

Synonym—*Certhia familiaris mexicana*.

Status—A common summer visitant in high Transition in the mountain ranges of extreme southeastern Arizona. Reported from the Chiricahua Mountains (Brewster, 1882, p. 81), the Santa Rita Mountains (Brewster, 1885b, p. 197), the Santa Catalina Mountains (Scott, 1885c, p. 350), and the Huachuca Mountains (Swarth, 1904b, p. 60).

339. *Certhia familiaris montana* Ridgway.

ROCKY MOUNTAIN CREEPER.

Synonyms—*Certhia familiaris*; *Certhia americana*; *Certhia familiaris* var. *americana*.

Status—Summer visitant in the higher mountains of northern and central Arizona. Has been found breeding on San Francisco Mountain, Mount Graham, and the Mogollon Mountains. One record of its occurrence as a migrant in southern Arizona (Swarth, 1904b, p. 61; Huachuca Mountains, March, two specimens), and one from northern Arizona in winter (Kennerly, 1859, p. 29; Pueblo Creek, January).

340. *Sitta carolinensis nelsoni* Mearns.

ROCKY MOUNTAIN NUTHATCH.

Synonyms—*Sitta carolinensis*; *Sitta aculeata*; *Sitta carolinensis aculeata*.

Status—Common summer visitant in the Transition zone, sometimes in high Upper Sonoran. In some of the more southern ranges, the Santa Catalina and Huachuca mountains, it is known to remain throughout the year. In central Arizona it is recorded as a permanent resident at Fort Whipple (Coues, 1866a, p. 78), and as occurring in the Mogollon Mountains in summer, and in the Verde Valley in winter (Mearns, 1890a, p. 262). Found at Williams in February (Wetmore, 1908, p. 386). The only record from the arid Lower Sonoran southwestern portion of Arizona is from Sacaton (Gilman, 1911a, p. 35), where it was seen from September 3 until the first week in December, 1910.

341. *Sitta canadensis* Linnaeus.

RED-BREASTED NUTHATCH.

Status—There are very few Arizona records. One taken at Fort Yuma (Baird, 1861, p. 6). The next record is of a specimen in the Santa Catalina Mountains, October 29, 1885 (Scott, 1888, p. 165). Found breeding in the highest parts of the San Francisco and Mogollon mountains (Mearns, 1890a, p. 263); four specimens in the Huachuca Mountains, April 6, 1902 (Swarth, 1904b, p. 61), and several seen at Sacaton during October, 1910 (Gilman, 1911a, p. 35).

342. ***Sitta pygmaea pygmaea*** Vigors.

PIGMY NUTHATCH.

Synonym—*Sitta pusilla* var. *pygmaea*.

Status—Common resident in the Transition zone throughout the state. Is apparently non-migratory, and though found on all of the higher mountains, has never been observed, even in winter, in the intervening low valleys.

343. ***Baeolophus inornatus griseus*** (Ridgway).

GRAY TITMOUSE.

Synonyms—*Lophophanes inornatus*; *Parus inornatus ridgwayi*; *Parus inornatus griseus*.

Status—Several records from the lower slopes of San Francisco Mountain and neighboring localities, where it is probably resident. Also reported from the Grand Cañon in September (Merriam, 1890, p. 41), from Kean Cañon in July, and from Fort Defiance (Baird, 1861, p. 6). Coues (1866a, p. 79) found it as a winter visitant at Fort Whipple. Apparently of rare occurrence in southern Arizona, judging from the absence of records. The only definite statement of its occurrence in the south is that of Brewster (1882, p. 79), who states that it is of rare occurrence in the Chiricahua Mountains. Henshaw (1875b, p. 167) speaks of it as occurring in the oak region of southern Arizona, but mentions no particular locality, and lists no specimens.

344. ***Baeolophus wollweberi*** (Bonaparte).

BRIDLED TITMOUSE.

Synonyms—*Lophophanes wollweberi*; *Parus wollweberi*; *Baeolophus wollweberi annexus*.

Status—Common resident of the Upper Sonoran foothill country of the mountains of southeastern and central Arizona. Reported from nearly all the ranges south and west of the Mogollon Divide, and as far north as Fort Whipple (Coues, 1866a, p. 79). Occasionally wanders to a lower zone in the fall and winter, as evidenced by its occurrence at Sacaton in October and November, 1909 (Gilman, 1910, p. 46). Preeminently a bird of the oak woods.

345. ***Penthestes sclateri*** (Kleinschmidt).

MEXICAN CHICKADEE.

Synonym—*Parus meridionalis*.

Status—In Arizona it is known to occur only in the Transition zone of the Chiricahua Mountains (7000 to 10,000 feet), where it is reported to be not uncommon (Brewster, 1882, p. 79).

346. ***Penthestes gambeli gambeli*** (Ridgway).

MOUNTAIN CHICKADEE.

Synonyms—*Parus montanus*; *Poecile montanus*; *Parus gambeli*.

Status—Common resident in the higher mountains of northern and central Arizona: San Francisco Mountain, Mogollon Mountains, Fort Whipple, etc., south to Mount Graham. Occurs in the Santa Catalina Mountains in winter

(specimens in the collection of F. S. Daggett) and may breed in that range, as it has been seen there in June and July (Rhoads, 1892, p. 125). Mr. F. S. Daggett also has specimens in his collection taken in the Santa Catalina Mountains in June.

347. ***Psaltriparus plumbeus* (Baird).**

LEAD-COLORED BUSH-TIT.

Synonyms—*Psaltria plumbea*; *Psaltriparus minimus* var. *plumbeus*; *Psaltriparus santaritae*; *Psaltriparus melanotis lloydi*.

Status—Abundant in Upper Sonoran and Transition zones in northern and eastern Arizona. Reported from many localities: Fort Whipple, Keam Cañon, Little Colorado River, Hualpai, Huachuca, Santa Rita, and Chiricahua mountains, etc. There are no records from the arid southwestern portion of the state, nor from the Colorado River Valley, at its western border.

348. ***Auriparus flaviceps flaviceps* (Sundevall).**

VERDIN.

Synonym—*Paroides flaviceps*.

Status—Common resident of the Lower Sonoran valleys of southern and western Arizona. Occurs along the Colorado River to the extreme northwestern corner of the state (Beaverdam Creek, Fisher, 1893b, p. 142). In eastern Arizona it is not reported from any point north of the Gila River. The northern and eastern limits of its range are formed by the rising slopes of the mountains forming the great divide which extends diagonally across the state.

349. ***Regulus calendula calendula* (Linnaeus).**

RUBY-CROWNED KINGLET.

Status—A summer visitant of the higher parts of the mountains of northern and central Arizona. Recorded as breeding on San Francisco Mountain, Mount Graham, and the Mogollon, White and Chiricahua mountains. Known to breed also in the Santa Catalina Mountains (F. C. Willard, MS). Remains through the winter in the lower valleys throughout the state. Generally distributed during the migrations.

350. ***Polioptila caerulea obscura* Ridgway.**

WESTERN GNATCATCHER.

Synonym—*Polioptila caerulea*.

Status—Breeds principally in the Upper Sonoran zone. Definitely reported in summer from San Francisco Mountain, Fort Whipple, and the Hualpai Mountains, in the north; and from the Santa Catalina and Huachuca mountains in southern Arizona. In winter occurs locally in the warmer valleys of southern Arizona (Tucson, etc.), and along the lower Colorado River, from Needles southward.

351. ***Polioptila plumbea* (Baird).**

PLUMBEOUS GNATCATCHER.

Synonyms—*Culicivora plumbea*; *Polioptila melanura*; *Polioptila caerulea* var. *plumbea*.

Status—Fairly common resident of the Lower Sonoran zone of southern, western, and parts of northern Arizona. Found breeding in all the low valleys south of the Mogollon Divide (Gila, Santa Cruz, San Pedro, etc.), north to Fort Whipple (Coues, 1866a, p. 66) and Fort Mohave. Also reported in summer from Keam Cañon, in northwestern Arizona (Fisher, 1903, p. 36). As it has been taken at some of the northernmost points of record in Arizona during the winter months, it is probably a permanent resident wherever it is found in the state, though possibly there are slight local migrations.

352. ***Myadestes townsendi* (Audubon).**

TOWNSEND SOLITAIRE.

Synonym—*Ptilogonys townsendii*.

Status—Breeds in the Boreal zone of the San Francisco Mountains (Merriam, 1890, p. 101); not known to do so elsewhere in Arizona, though it may prove to be a summer visitant in some other of the higher ranges (Mogollon Mountains, White Mountains, etc.). A pair of birds seen in the Huachuca Mountains during June, 1910, under circumstances possibly indicative of their breeding (F. C. Willard, MS). A common migrant in the Upper Sonoran and Transition zones, observed at various points in eastern Arizona. Seen in northern Arizona in January and February (Kennerly, 1859, p. 25). Has occurred through the winter in the Santa Catalina Mountains (Scott, 1888, p. 167), and in the Dragoon Mountains (Osgood, 1903, p. 151).

353. ***Hylocichla fuscescens salicicola* Ridgway.**

WILLOW THRUSH.

Synonym—*Turdus fuscescens salicicolus*.

Status—The only positive record for Arizona is that of a specimen taken by Herbert Brown at Tucson, in May, 1882 (Scott, 1888, p. 167). Breninger (1901a, p. 46) reported one as seen on the Pima Indian Reservation, south of Phoenix, in September [1900?], but the bird was not taken.

354. ***Hylocichla ustulata ustulata* (Nuttall).**

RUSSET-BACKED THRUSH.

Synonyms—*Turdus ustulatus*; *Hylocichla ustulata swainsoni*.

Status—Although there are singularly few records of the occurrence of this species in Arizona, it is nevertheless a common migrant in the southern and western parts of the state. The published records are as follows: Santa Rita Mountains, May 17, 1881, one specimen (Brewster, 1882, p. 68); Fort Lowell, May 21, 1884, one specimen (Brewster, 1885a, p. 85); Yuma, May, three specimens (Morcom, 1887, p. 57); Huachuca Mountains, common migrant in the spring (Swarth, 1904b, p. 63). Re-examination of specimens recorded as *H. u. swainsoni* (Swarth, l. c.) shows them all to be examples of *H. u. ustulata*.

355. ***Hylocichla guttata guttata* (Pallas).**

## KADIAK HERMIT THRUSH.

Synonyms—*Turdus nanus*; *Hylocichla nana*; *Turdus pallasi* var. *nanus*; *Turdus unalascae*; *Turdus aonalaschkae*.

Status—Common migrant and winter visitant in the valleys and foothills of southern Arizona, and along the Colorado River. Verde Valley, winter (Mearns, 1890a, p. 263); Santa Catalina Mountains, winter (Scott, 1888, p. 167); Fort Whipple, migrant (Coues, 1866a, p. 65). It has not been reported from any point in Arizona north and east of the Mogollon Divide.

356. ***Hylocichla guttata auduboni* (Baird).**

## ROCKY MOUNTAIN HERMIT THRUSH.

Synonyms—*Turdus pallasi* var. *auduboni*; *Turdus unalascae auduboni*; *Turdus aonalaschkae auduboni*; *Turdus guttatus auduboni*.

Status—Summer visitant in the higher mountains of northern and eastern Arizona. Has been found breeding on Mount Graham (Henshaw, 1875b, p. 144), the Mogollon Mountains (Mearns, 1890a, p. 263), San Francisco Mountain (Merriam, 1890, p. 101), and the Chiricahua Mountains (Fisher, 1904, p. 81). In the Santa Catalina Mountains Scott (1885c, p. 349) found it very rare but apparently breeding. Reported as a migrant in the Dragoon Mountains (Osgood, 1903, p. 151), and in the Huachuca Mountains (Swarth, 1904b, p. 64). There are no records from localities in the lowlands.

357. ***Hylocichla guttata nanus* (Audubon).**

## DWARF HERMIT THRUSH.

Status—Apparently of rare occurrence in Arizona. The following two references are the only ones I have seen relating definitely to this subspecies: Huachuca Mountains, one specimen, April 6, 1903 (Swarth, 1904b, p. 64): "Santa Catalina Mountains, October 30; . . . Fort Verde, November 9; Tucson, January 17" (Ridgway, 1907, p. 42). There is in the Museum of Vertebrate Zoology a skin (no. 6432) taken by J. G. Cooper at Fort Mohave, January 25, 1861.

358. ***Hylocichla guttata slevini* Grinnell.**

## MONTEREY HERMIT THRUSH.

Status—A rare migrant, reported only from the Huachuca and Chiricahua mountains (Swarth, 1904b, p. 64).

359. ***Planesticus migratorius propinquus* (Ridgway).**

## WESTERN ROBIN.

Synonyms—*Turdus migratorius*; *Planesticus migratorius*; *Turdus migratorius propinquus*; *Merula migratoria propinqua*.

Status—Breeds commonly in most of the high mountain ranges of eastern Arizona. Has been reported in summer from the Mogollon Mountains, San Francisco Mountain, Huachuca Mountains, and the vicinity of Fort Whipple. Winters in the valleys and lowlands generally.

360.

***Sialia sialis fulva* Brewster.**

AZURE BLUEBIRD.

Synonym—*Sialia sialis azurea*.

Status—Rare in summer in the high mountains of extreme southern Arizona: Santa Rita Mountains, June 18 and 20, 1884, three specimens (Brewster, 1885a, p. 85); Huachuca Mountains (Ridgway, 1907, p. 146). The latter record, according to information received by me from Mr. W. W. Cooke, is based upon a specimen taken by Dr. A. K. Fisher, at Fort Huachuca, April 30, 1892. The species is not of regular or of common occurrence in either of these mountain ranges, where *Sialia mexicana bairdi* is the common breeding bluebird; in fact the above records are the only ones known to me, though the region has been visited frequently by collectors.

361.

***Sialia mexicana bairdi* Ridgway.**

CHESTNUT-BACKED BLUEBIRD.

Synonyms—*Sialia occidentalis*; *Sialia mexicana*; *Sialia mexicana occidentalis*.

Status—Common resident in high Transition in the mountains of northern and eastern Arizona, ranging west to the Hualpai Mountains (Stephens, 1903, p. 105). Also definitely reported as occurring in summer on San Francisco Mountain, and in the Mogollon, Chiricahua, Santa Catalina, and Huachuca ranges. Of more general distribution during the winter: still to be found in the high ranges of southern Arizona, but in the valleys and plains also, and along the Colorado River.

362.

***Sialia currucoides* (Bechstein).**

MOUNTAIN BLUEBIRD.

Synonym—*Sialia arctica*.

Status—A summer visitant of the higher mountains north of the Mogollon Divide. Reported as breeding in the San Francisco and Mogollon mountains (Mearns, 1890a, p. 264). Occurs during the winter at Fort Whipple, along the lower Colorado River, and in the valleys of southern Arizona—Tucson, San Pedro River, etc.

## HYPOTHETICAL LIST

I.

***Colymbus auritus* Linnaeus.**

HORNED GREBE.

Synonym—*Podiceps cornutus*.

Status—Known only from the records by Coues of its occurrence on the Colorado River (1866a, p. 100), and at Fort Grant (1868, p. 84), statements which are not sufficiently explicit.

2. **Gavia pacifica** (Lawrence).

## PACIFIC LOON.

Synonyms—*Colymbus pacificus*; *Colymbus arcticus* var. *pacificus*.

Status—The only reason for including this species in a list of the birds of Arizona lies in the fact that it is contained in Coues' "List of the Birds of Fort Whipple" (1866a, p. 100). No specific instance of its occurrence is cited, however; in fact he does not even explicitly state that the species was found in the region, and though it may occur in winter on the Colorado River, there is at present no proof that such is the case.

3. **Larus occidentalis** Audubon.

## WESTERN GULL.

Status—Recorded as seen commonly in midwinter along the Colorado River from its mouth to a point forty miles south of Yuma (Price, 1899, p. 90). If no mistake was made in identification the species may be found ranging up the river to within the Arizona boundary.

4. **Larus heermanni** Cassin.

## HEERMANN GULL.

Status—Seen by Rhoads, in winter, on the lower Colorado River, "as far up as Yuma, Arizona" (Stone, 1905, p. 687). The improbability of the occurrence demands the verification of specimens actually secured.

5. **Larus atricilla** Linnaeus.

## LAUGHING GULL.

Synonym—*Chroecocephalus atricilla*.

Status—"Colorado River, particularly its lower portions. A specimen taken over a hundred miles from any body of water, near the eastern border of the Territory" (Cones, 1866a, p. 99). This is the only Arizona record.

6. **Larus franklini** Richardson.

## FRANKLIN GULL.

Synonym—*Chroecocephalus franklini*.

Status—"I am under the impression that I also saw *Ch. franklinii* about twenty miles from the river near Fort Mojave" (Coues, 1866a, p. 99).

7. **Branta bernicla glaucogastra** (Brehm).

## BRANT.

Synonym—*Bernicla brenta*.

Status—Mentioned by Coues (1865b, p. 538) as occurring on the Gila River, and by Woodhouse (1853, p. 102) as abundant in "New Mexico". Both statements seem improbable.

8. **Guara rubra** (Linnaeus).

## SCARLET IBIS.

Status—Known only from the record of a flock of seven or eight birds, supposedly this species, seen at Rillito Creek, near Fort Lowell, September 17, 1890 (Brown, 1899a, p. 270).

9. ***Creciscus jamaicensis*** (Gmelin).

BLACK RAIL.

Synonym—*Porsana jamaicensis*.

Status—Doubtfully recorded from the vicinity of Tucson, on the basis of a bird, believed to be of this species, seen April 23, 1881 (Brewster, 1883, p. 36).

10. ***Limosa fedoa*** (Linnaeus).

MARbled GODWIT.

Status—A bird supposed to be of this species seen, but not secured, on the San Pedro River, January 27, 1886 (Scott, 1886, p. 386).

11. ***Limosa haemastica*** (Linnaeus).

HUDSONIAN GODWIT.

Status—Its occurrence in the state can not be considered as established by the record of the observation of a bird "probably of this species" (Visher, 1910b, p. 280).

12. ***Totanus flavipes*** (Gmelin).

YELLOWLEGS.

Status—One record, of its occurrence near Tucson, in September (Visher, 1910b, p. 280). In the absence of specimens it may be questioned.

13. ***Charadrius dominicus dominicus*** Müller.

GOLDEN PLOVER.

Status—The only record is that of two seen, but not secured, near Tucson (Visher, 1910b, p. 281).

14. ***Columba flavirostris*** Wagler.

RED-BILLED PIGEON.

Status—Known only from the record by Bendire (1892, p. 128) of three birds (not seen by himself) said to have been shot in the foothills of the Graham Mountains, near Fort Grant, July 25, 1886.

15. ***Gymnogyps californianus*** (Shaw).

CALIFORNIA CONDOR.

Synonyms—*Cathartes californianus*; *Pseudogryphus californianus*.

Status—"Resident in Southern Arizona. Individuals observed at Fort Yuma in September, 1865" (Coues, 1866a, p. 42). The statement as to its occurrence in southern Arizona lacks confirmation; Fort Yuma is on the California side of the river. There are doubtful records of its occurrence in the Santa Catalina Mountains (Rhoads, 1892, p. 114), and at Pierce's Ferry, Colorado River (north-west Arizona), in March, 1881 (Brown, 1899b, p. 272).

16. ***Sarcoramphus papa*** (Linnaeus).

KING VULTURE.

Synonym—*Gyparchus papa*.

Status—The very doubtful records of its occurrence on San Francisco River (Coues, 1866a, p. 49), and the Verde River (Coues, 1881b, p. 248) lack confirmation.

17. **Elanus leucurus** (Vieillot).

WHITE-TAILED KITE.

Status—The only definite record for Arizona is that of F. T. Pember, who claimed to have met with the species near Gila Bend, in April (1892, p. 49).

18. **Buteo lineatus elegans** Cassin.

RED-BELLIED HAWK.

Synonym—*Buteo elegans*.

Status—The only record of the occurrence of this species in Arizona is that of a specimen collected by Kennerly and Mollhausen on the Colorado Chiquito, November 17, 1853 (Baird, 1858, p. 28). According to information received by me from Mr. W. W. Cooke it is not now to be found in the National Museum collection, although entered in the catalogue, with data as given above. Under the circumstances the species may be excluded from the regular list until the occurrence can be confirmed.

19. **Xenopicus albolarvatus** (Cassin).

WHITE-HEADED WOODPECKER.

Status—The alleged occurrence of this species in the Santa Catalina Mountains (Visher, 1910b, p. 282) seems doubtful.

20. **Otocoris alpestris praticola** Henshaw.

PRAIRIE HORNED LARK.

Status—One specimen recorded from Fort Verde, in winter (Oberholser, 1902, p. 825). The possibility presents itself of this bird being an individual extreme of some one of the several races regularly frequenting the region, or an intergrade between two of them, rather than belonging to the race to which it has been referred. In treating slightly differentiated subspecies of such a variable species it seems unsafe to assert such an extraordinary extension of range on such slender evidence.

21. **Agelaius phoeniceus californicus** Nelson.

BICOLORED RED-WINGED BLACKBIRD.

Synonym—*Agelaius gubernator californicus*.

Status—Straggling east to western Arizona (A. O. U. *Check-List*, 1910, p. 235). According to information received by me from Mr. W. W. Cooke, this statement is based upon a specimen found dead July 6, 1907, by Mr. Vernon Bailey, at Casa Grande. Intergradation between this form and *neutralis* has been demonstrated, and the possibility suggests itself of the supposed specimen of *californicus* being really an individual extreme of *neutralis*, a common species in the region. The occurrence of *californicus*, apparently a non-migratory form, so far from the normal boundaries of its range, should receive the strongest possible verification.

22. **Wilsonia pusilla pusilla** (Wilson).

WILSON WARBLER.

Status—According to Ridgway (1902, p. 710) this species is "occasional during migration in . . . Arizona (Tucson, May: Fort Whipple, May)".

23. ***Regulus satrapa satrapa* Lichtenstein.**

GOLDEN-CROWNED KINGLET.

Synonym—*Regulus satrapa olivaceus*.

Status—Most of the statements relative to the occurrence of this species in Arizona can be traced back to Woodhouse's casual mention of birds seen on San Francisco Mountain (1853, pp. 67, 68). In the absence of specimens, and of subsequent confirmation by other observers, it seems best to exclude the species from the regular list. A recent record from the Santa Catalina Mountains, in July (Rhoads, 1892, p. 125), can not be considered as satisfactory, as specimens were not secured.

24. ***Ixoreus naevius naevius* (Gmelin).**

VARIED THRUSH.

Synonym—*Turdus naevius*.

Status—Said to have been obtained by Lieut. Ives' expedition on the Colorado River between Forts Mohave and Yuma (Baird, 1861, p. 5). This may or may not have been on the Arizona side of the river, and on this account alone the species may be omitted from the Arizona list. At most it can be but an exceedingly rare straggler into the region.

## AN ANALYSIS OF THE AVIFAUNA OF ARIZONA

From the foregoing data the birds occurring in the state of Arizona may be divided into the following classes:

Resident	152
Summer visitant	72
Winter visitant	57
Transient	30
Of casual occurrence	51

giving a total of 362 species and subspecies found within the state.

## RESIDENT SPECIES

1. <i>Mergus americanus</i>	20. <i>Colinus ridgwayi</i>
2. <i>Anas platyrhynchos</i>	21. <i>Callipepla squamata</i>
3. <i>Chaulelasmus streperus</i>	22. <i>Lophortyx gambeli</i>
4. <i>Mareca americana</i>	23. <i>Cyrtonyx montezumae mearnsi</i>
5. <i>Querquedula discors</i>	24. <i>Dendragapus obscurus obscurus</i>
6. <i>Querquedula cyanoptera</i>	25. <i>Meleagris gallopavo merriami</i>
7. <i>Spatula clypeata</i>	26. <i>Columba fasciata fasciata</i>
8. <i>Dafila acuta</i>	27. <i>Zenaidura macroura marginella</i>
9. <i>Erismatura jamaicensis</i>	28. <i>Chaemepelia passerina pallescens</i>
10. <i>Botaurus lentiginosus</i>	29. <i>Scardafella inca</i>
11. <i>Ardea herodias treganzai</i>	30. <i>Cathartes aura septentrionalis</i>
12. <i>Butorides virescens anthonyi</i>	31. <i>Circus hudsonius</i>
13. <i>Nycticorax nycticorax naevius</i>	32. <i>Accipiter velox</i>
14. <i>Grus mexicana</i>	33. <i>Accipiter cooperi</i>
15. <i>Porzana carolina</i>	34. <i>Parabuteo unicinctus harrisi</i>
16. <i>Gallinula galeata</i>	35. <i>Buteo borealis calurus</i>
17. <i>Fulica americana</i>	36. <i>Buteo abbreviatus</i>
18. <i>Actitis macularius</i>	37. <i>Urubitinga anthracina</i>
19. <i>Oxyechus vociferus</i>	38. <i>Aquila chrysaetos</i>

39. *Haliaeetus leucocephalus leucocephalus*
40. *Falco mexicanus*
41. *Falco peregrinus anatum*
42. *Falco fusco-caerulescens*
43. *Falco sparverius sparverius*
44. *Polyborus cheriway*
45. *Aluco pratincola*
46. *Strix occidentalis huachucae*
47. *Cryptoglaux acadica acadica*
48. *Otus asio cineraceus*
49. *Otus asio gilmani*
50. *Bubo virginianus pallescens*
51. *Speotyto cunicularia hypogaea*
52. *Glaucidium gnoma pinicola*
53. *Glaucidium phalaenoides*
54. *Micropallas whitneyi*
55. *Geococcyx californianus*
56. *Dryobates villosus leucothorectis*
57. *Dryobates pubescens homorus*
58. *Dryobates scalaris cactophilus*
59. *Dryobates arizonae*
60. *Picoides americanus dorsalis*
61. *Sphyrapicus thyroideus*
62. *Melanerpes formicivorus aculeatus*
63. *Asyndesmus lewisi*
64. *Centurus uropygialis*
65. *Colaptes cafer collaris*
66. *Colaptes chrysoides mearnsi*
67. *Phalaenoptilus nuttalli nuttalli*
68. *Aeronautes melanoleucus*
69. *Calypte costae*
70. *Tyrannus vociferans*
71. *Myiarchus cinerascens*
72. *Sayornis sayus*
73. *Sayornis nigricans*
74. *Pyrocephalus rubinus mexicanus*
75. *Otocoris alpestris adusta*
76. *Otocoris alpestris pallida*
77. *Otocoris alpestris occidentalis*
78. *Cyanocitta stelleri diademata*
79. *Aphelocoma woodhousei*
80. *Aphelocoma sieberi arizonae*
81. *Perisoreus canadensis capitalis*
82. *Corvus corax sinuatus*
83. *Corvus cryptoleucus*
84. *Corvus brachyrhynchos hesperis*
85. *Nucifraga columbiana*
86. *Cyanocephalus cyanocephalus*
87. *Molothrus ater obscurus*
88. *Xanthocephalus xanthocephalus*
89. *Agelaius phoeniceus sonoriensis*
90. *Agelaius phoeniceus neutralis*
91. *Sturnella magna hoopesi*
92. *Sturnella neglecta*
93. *Euphagus cyanocephalus*
94. *Hesperiphona vespertina montana*
95. *Carpodacus cassini*
96. *Carpodacus mexicanus frontalis*
97. *Loxia curvirostra stricklandi*
98. *Passer domesticus*
99. *Astragalinus tristis pallidus*
100. *Astragalinus psaltria hesperophilus*
101. *Spinus pinus*
102. *Poecetes gramineus confinis*
103. *Passerculus sandwichensis nevadensis*
104. *Ammodramus savannarum bimaculatus*
105. *Chondestes grammacus strigatus*
106. *Spizella passerina arizonae*
107. *Spizella breweri*
108. *Junco phaeonotus palliatus*
109. *Junco phaeonotus dorsalis*
110. *Amphispiza bilineata deserticola*
111. *Aimophila carpalis*
112. *Aimophila ruficeps scotti*
113. *Melospiza melodia saltonis*
114. *Pipilo maculatus montanus*
115. *Pipilo fuscus mesoleucus*
116. *Pipilo aberti*
117. *Cardinalis cardinalis superbus*
118. *Pyrrhuloxia sinuata sinuata*
119. *Phainopepla nitens*
120. *Lanius ludovicianus excubitorides*
121. *Vireo huttoni stephensi*
122. *Peucedramus olivaceus*
123. *Dendroica auduboni auduboni*
124. *Cinclus mexicanus unicolor*
125. *Mimus polyglottos leucopterus*
126. *Toxostoma curvirostre palmeri*
127. *Toxostoma bendirei*
128. *Toxostoma lecontei lecontei*
129. *Toxostoma crissale*
130. *Heleodytes brunneicapillus couesi*
131. *Salpinctes obsoletus obsoletus*
132. *Catherpes mexicanus conspersus*
133. *Thryomanes bewicki eremophilus*
134. *Troglodytes aedon parkmani*
135. *Telmatodytes palustris plesius*
136. *Certhia familiaris montana*
137. *Sitta carolinensis nelsoni*
138. *Sitta canadensis*
139. *Sitta pygmaea pygmaea*
140. *Baeolophus inornatus griseus*
141. *Baeolophus wollweberi*
142. *Penthestes sclateri*
143. *Penthestes gambeli gambeli*
144. *Psaltiriparus plumbeus*
145. *Auriparus flaviceps flaviceps*
146. *Regulus calendula calendula*
147. *Polioptila caerulea obscura*
148. *Polioptila plumbea*
149. *Myadestes townsendi*
150. *Planesticus migratorius propinquus*
151. *Sialia mexicana bairdi*
152. *Sialia currucoides*

These species are resident in the sense that the available data seems to show that they occur somewhere in the state at all times of the year. Many of them are truly migratory, and, in making altitudinal migrations, spend the summer and winter in as widely different surroundings as if they had travelled instead over the length of the continent. Some are almost entirely restricted to the warm valleys of the lower parts of the Colorado and Gila rivers during the winter.

From the list of residents may be selected the following species which are probably to be found over the same grounds the year through, though some of them may, in fall and winter, spread out over a somewhat wider territory.

<i>Colinus ridgwayi</i>	<i>Passer domesticus</i>
<i>Callipepla squamata</i>	<i>Junco p. palliatus</i>
<i>Lophortyx gambeli</i>	<i>Junco p. dorsalis</i>
<i>Cyrtonyx m. mearnsi</i>	<i>Aimophila r. scotti</i>
<i>Dendragapus o. obscurus</i>	<i>Melospiza m. saltonis</i>
<i>Meleagris g. merriami</i>	<i>Pipilo m. montanus</i>
<i>Buteo b. calurus</i>	<i>Pipilo f. mesoleucus</i>
<i>Bubo v. pallescens</i>	<i>Pipilo aberti</i>
<i>Speotyto c. hypogaea</i>	<i>Vireo h. stephensi</i>
<i>Geococcyx californianus</i>	<i>Toxostoma c. palmeri</i>
<i>Dryobates v. leucothorectis</i>	<i>Toxostoma bendirei</i>
<i>Dryobates s. cactophilus</i>	<i>Toxostoma l. lecontei</i>
<i>Dryobates arizonae</i>	<i>Toxostoma crissale</i>
<i>Picoides a. dorsalis</i>	<i>Heleodytes b. conesi</i>
<i>Centurus uropygialis</i>	<i>Salpinctes o. obsoletus</i>
<i>Colaptes c. mearnsi</i>	<i>Catherpes m. conspersus</i>
<i>Otocoris a. adusta</i>	<i>Thryomanes b. cremophilus</i>
<i>Otocoris a. pallida</i>	<i>Sitta p. pygmaea</i>
<i>Cyanocitta s. diademata</i>	<i>Baeolophus wollweberi</i>
<i>Aphelocoma woodhousei</i>	<i>Psaltiriparus plumbeus</i>
<i>Aphelocoma s. arizonae</i>	<i>Auriparus f. flaviceps</i>
<i>Perisoreus c. capitalis</i>	<i>Polioptila plumbea</i>

#### SUMMER VISITANTS

1. <i>Colymbus nigricollis californicus</i>	19. <i>Basilinna leucotis</i>
2. <i>Plegadis guarauna</i>	20. <i>Cynanthus latirostris</i>
3. <i>Mycteria americana</i> (not known to breed)	21. <i>Tyrannus verticalis</i>
4. <i>Melopelia asiatica trudeaui</i>	22. <i>Myiodynastes luteiventris</i>
5. <i>Buteo albicaudatus sennetti</i>	23. <i>Myiarchus magister magister</i>
6. <i>Buteo swainsoni</i>	24. <i>Myiarchus lawrencei olivascens</i>
7. <i>Asturina plagiata</i>	25. <i>Nuttallornis borealis</i>
8. <i>Otus trichopsis</i>	26. <i>Myiochanes pertinax pallidiventris</i>
9. <i>Otus flammeolus</i>	27. <i>Myiochanes richardsoni richardsoni</i>
10. <i>Coccyzus americanus occidentalis</i>	28. <i>Empidonax difficilis difficilis</i>
11. <i>Trogon ambiguus</i>	29. <i>Empidonax trailli trailli</i>
12. <i>Antrostomus vociferus macromystax</i>	30. <i>Empidonax fulvifrons pygmaeus</i>
13. <i>Chordeiles virginianus henryi</i>	31. <i>Camptostoma imberbe</i>
14. <i>Chordeiles acutipennis texensis</i>	32. <i>Tangavius aeneus aeneus</i>
15. <i>Eugenes fulgens</i>	33. <i>Icterus parisorum</i>
16. <i>Cyanolacmus clemenciae</i>	34. <i>Icterus cucullatus nelsoni</i>
17. <i>Archilochus alexandri</i>	35. <i>Icterus bullocki</i>
18. <i>Selasphorus platycercus</i>	36. <i>Zonotrichia leucophrys leucophrys</i>
	37. <i>Spizella atrogularis</i>

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| 38. <i>Peucaea botterii</i>                      | 56. <i>Vireo vicinior</i>                |
| 39. <i>Peucaea cassini</i>                       | 57. <i>Vermivora luciae</i>              |
| 40. <i>Zamelodia melanocephala melanocephala</i> | 58. <i>Vermivora virginiae</i>           |
| 41. <i>Guiraca caerulea lazula</i>               | 59. <i>Vermivora celata celata</i>       |
| 42. <i>Passerina amoena</i>                      | 60. <i>Dendroica aestiva sonorana</i>    |
| 43. <i>Piranga ludoviciana</i>                   | 61. <i>Dendroica auduboni nigrifrons</i> |
| 44. <i>Piranga hepatica</i>                      | 62. <i>Dendroica graciae</i>             |
| 45. <i>Piranga rubra cooperi</i>                 | 63. <i>Dendroica nigrescens</i>          |
| 46. <i>Progne subis subis</i>                    | 64. <i>Oporornis tolmiei</i>             |
| 47. <i>Petrochelidon lunifrons lunifrons</i>     | 65. <i>Geothlypis trichas scirpicola</i> |
| 48. <i>Petrochelidon lunifrons melanogastra</i>  | 66. <i>Icteria virens longicauda</i>     |
| 49. <i>Hirundo erythrogastra</i>                 | 67. <i>Wilsonia pusilla pileolata</i>    |
| 50. <i>Tachycineta thalassina lepida</i>         | 68. <i>Setophaga picta</i>               |
| 51. <i>Riparia riparia</i>                       | 69. <i>Cardellina rubrifrons</i>         |
| 52. <i>Stelgidopteryx serripennis</i>            | 70. <i>Certhia familiaris albescens</i>  |
| 53. <i>Vireosylva gilva swainsoni</i>            | 71. <i>Hylocichla guttata auduboni</i>   |
| 54. <i>Lawivireo solitarius plumbeus</i>         | 72. <i>Sialia sialis fulva</i>           |
| 55. <i>Vireo belli arizonae</i>                  |  |

For comments upon the species included in this list see beyond, under the discussion of the composition of the avifauna of the different life zones within the state.

#### WINTER VISITANTS

- |  |  |
|--|--|
| 1. <i>Aechmophorus occidentalis</i>          | 30. <i>Ceryle alcyon</i>                       |
| 2. <i>Podilymbus podiceps</i>                | 31. <i>Sphyrapicus varius nuchalis</i>         |
| 3. <i>Gavia immer</i>                        | 32. <i>Otocoris alpestris leucolaema</i>       |
| 4. <i>Phalacrocorax auritus albociliatus</i> | 33. <i>Agelaius phoeniceus fortis</i>          |
| 5. <i>Pelecanus erythrorhynchos</i>          | 34. <i>Astragalinus lawrencei</i>              |
| 6. <i>Mergus serrator</i>                    | 35. <i>Calcarius ornatus</i>                   |
| 7. <i>Nettion carolinense</i>                | 36. <i>Rhynchophanes mccowni</i>               |
| 8. <i>Marila americana</i>                   | 37. <i>Passerculus sandwichensis alaudinus</i> |
| 9. <i>Marila valisineria</i>                 | 38. <i>Ammodramus bairdi</i>                   |
| 10. <i>Marila marila</i>                     | 39. <i>Zonotrichia leucophrys gambeli</i>      |
| 11. <i>Marila affinis</i>                    | 40. <i>Junco hyemalis hyemalis</i>             |
| 12. <i>Charitonetta albeola</i>              | 41. <i>Junco oreganus thurberi</i>             |
| 13. <i>Chen hyperboreus hyperboreus</i>      | 42. <i>Junco oreganus shufeldti</i>            |
| 14. <i>Anser albifrons gambeli</i>           | 43. <i>Junco mearnsi</i>                       |
| 15. <i>Branta canadensis canadensis</i>      | 44. <i>Junco caniceps</i>                      |
| 16. <i>Branta canadensis hutchinsi</i>       | 45. <i>Amphispiza nevadensis nevadensis</i>    |
| 17. <i>Dendrocygna bicolor</i>               | 46. <i>Melospiza melodia fallax</i>            |
| 18. <i>Olor columbianus</i>                  | 47. <i>Melospiza lincolni lincolni</i>         |
| 19. <i>Grus canadensis</i>                   | 48. <i>Passerella iliaca schistacea</i>        |
| 20. <i>Rallus virginianus</i>                | 49. <i>Pipilo maculatus curtatus</i>           |
| 21. <i>Recurvirostra americana</i>           | 50. <i>Oreospiza chlorura</i>                  |
| 22. <i>Gallinago delicata</i>                | 51. <i>Calamospiza melanocorys</i>             |
| 23. <i>Pisobia minutilla</i>                 | 52. <i>Bombycilla cedrorum</i>                 |
| 24. <i>Ereunetes mauri</i>                   | 53. <i>Geothlypis trichas occidentalis</i>     |
| 25. <i>Podasocys montanus</i>                | 54. <i>Anthus rubescens</i>                    |
| 26. <i>Archibuteo ferrugineus</i>            | 55. <i>Oreoscoptes montanus</i>                |
| 27. <i>Falco columbarius columbarius</i>     | 56. <i>Hylocichla guttata guttata</i>          |
| 28. <i>Asio wilsonianus</i>                  | 57. <i>Hylocichla guttata nanus</i>            |
| 29. <i>Asio flammeus</i>                     |  |

Most of these are migratory species which spend the summer at varying distances directly to the northward, and it is to be expected, of course, that they should occur in winter in this state. The occurrence of *Junco o. thurberi* and *Hylocichla g. namus* is further evidence of the existence of a migration route across the deserts to the westward, as shown by the various Pacific Coast birds migrating through Arizona.

#### TRANSIENT SPECIES

- |   |  |
|---|--|
| 1. <i>Herodias egretta</i>                  | 16. <i>Empidonax griseus</i>                 |
| 2. <i>Egretta candidissima candidissima</i> | 17. <i>Spizella pallida</i>                  |
| 3. <i>Steganopus tricolor</i>               | 18. <i>Passerina ciris</i>                   |
| 4. <i>Himantopus mexicanus</i>              | 19. <i>Spiza americana</i>                   |
| 5. <i>Pisobia bairdi</i>                    | 20. <i>Iridoprocne bicolor</i>               |
| 6. <i>Totanus melanoleucus</i>              | 21. <i>Lanivireo solitarius cassini</i>      |
| 7. <i>Helodromas solitarius cinnamomeus</i> | 22. <i>Vermivora rubricapilla gutturalis</i> |
| 8. <i>Numenius americanus</i>               | 23. <i>Vermivora celata lutescens</i>        |
| 9. <i>Aegialitis semipalmata</i>            | 24. <i>Dendroica aestiva brewsteri</i>       |
| 10. <i>Pandion haliaetus carolinensis</i>   | 25. <i>Dendroica townsendi</i>               |
| 11. <i>Chaetura vauxi</i>                   | 26. <i>Dendroica occidentalis</i>            |
| 12. <i>Selasphorus rufus</i>                | 27. <i>Seiurus noveboracensis notabilis</i>  |
| 13. <i>Stellula calliope</i>                | 28. <i>Wilsonia pusilla chryseola</i>        |
| 14. <i>Empidonax hammondi</i>               | 29. <i>Hylocichla ustulata ustulata</i>      |
| 15. <i>Empidonax wrighti</i>                | 30. <i>Hylocichla guttata slevini</i>        |

The thirty species listed above occur, as far as we know, merely as migrants, passing through Arizona on their way to and from their breeding grounds, neither nesting nor wintering anywhere within the state. Twelve of these species spend the summer on the Pacific coast in California or farther north, and their abundance during the migrations indicates the presence of a well defined migration route from southeast Arizona almost due westward and across the intervening deserts. These species are: *Chaetura vauxi*, *Selasphorus rufus*, *Stellula calliope*, *Empidonax hammondi*, *Lanivireo s. cassini*, *Vermivora r. gutturalis*, *Vermivora c. lutescens*, *Dendroica townsendi*, *Dendroica occidentalis*, *Wilsonia p. chryseola*, *Hylocichla u. ustulata*, and *Hylocichla g. slevini*.

Five of the species listed breed in the far north, and pass through Arizona in the course of a direct north and south migration. These are: *Pisobia bairdi*, *Totanus melanoleucus*, *Helodromas s. cinnamomeus*, *Aegialitis semipalmata*, *Seiurus n. notabilis*. Four other species breeding at nearer points north of Arizona, and hence following the same migration route through the state, are: *Steganopus tricolor*, *Himantopus mexicanus*, *Numenius americanus*, *Dendroica a. brewsteri*.

*Spizella pallida*, *Passerina ciris*, and *Spiza americana* are species from regions east of Arizona whose manner of occurrence, usually in the late summer, is apparently indicative of established migration routes. Of the remaining six species on the list of migrants, *Herodias egretta*, *Egretta c. candidissima*, *Pandion h. carolinensis*, *Empidonax wrighti*, *Empidonax griseus*, and *Iridoprocne bicolor*, it may be that some or all will be found breeding within the state, but the data available at the present time shows their presence only during the period of migration.

## SPECIES OF CASUAL OCCURRENCE

- |  |  |
|--|--|
| 1. <i>Gavia stellata</i>                         | 27. <i>Melanerpes erythrocephalus</i>        |
| 2. <i>Larus delawarensis</i>                     | 28. <i>Calypte anna</i>                      |
| 3. <i>Larus philadelphia</i>                     | 29. <i>Selasphorus alleni</i>                |
| 4. <i>Sterna forsteri</i>                        | 30. <i>Atthis heloisa morcomi</i>            |
| 5. <i>Sterna hirundo</i>                         | 31. <i>Calothorax lucifer</i>                |
| 6. <i>Hydrochelidon nigra surinamensis</i>       | 32. <i>Uranomitra salvini</i>                |
| 7. <i>Phaëthon aethereus</i>                     | 33. <i>Platypsaris aglaiae albiventris</i>   |
| 8. <i>Anhinga anhinga</i>                        | 34. <i>Pica pica hudsonia</i>                |
| 9. <i>Lophodytes cucullatus</i>                  | 35. <i>Carpodacus purpureus californicus</i> |
| 10. <i>Clangula clangula americana</i>           | 36. <i>Passerculus rostratus rostratus</i>   |
| 11. <i>Dendrocygna autumnalis</i>                | 37. <i>Spizella monticola ochracea</i>       |
| 12. <i>Ixobrychus exilis</i>                     | 38. <i>Junco montanus</i>                    |
| 13. <i>Rallus levipes</i>                        | 39. <i>Melospiza melodia merrilli</i>        |
| 14. <i>Coturnicops noveboracensis</i>            | 40. <i>Zamelodia ludoviciana</i>             |
| 15. <i>Ionornis martinicus</i>                   | 41. <i>Passerina versicolor pulchra</i>      |
| 16. <i>Lobipes lobatus</i>                       | 42. <i>Bombycilla garrula</i>                |
| 17. <i>Macrorhamphus griseus scolopaceus</i>     | 43. <i>Lanius borealis</i>                   |
| 18. <i>Pelidna alpina sakhalina</i>              | 44. <i>Vireosylva olivacea</i>               |
| 19. <i>Catoptrophorus semipalmatus inornatus</i> | 45. <i>Protonotaria citrea</i>               |
| 20. <i>Bartramia longicauda</i>                  | 46. <i>Dendroica coronata</i>                |
| 21. <i>Astur atricapillus atricapillus</i>       | 47. <i>Dendroica virens</i>                  |
| 22. <i>Archibuteo lagopus sanctijohannis</i>     | 48. <i>Setophaga ruticilla</i>               |
| 23. <i>Falco columbarius richardsoni</i>         | 49. <i>Toxostoma rufum</i>                   |
| 24. <i>Rhynchopsitta pachyrhyncha</i>            | 50. <i>Nannus hiemalis pacificus</i>         |
| 25. <i>Crotophaga sulcirostris</i>               | 51. <i>Hylocichla fuscescens salicicola</i>  |
| 26. <i>Ceryle americana septentrionalis</i>      |  |

That this list is of such length is undoubtedly largely due to the defective data at our command; and many of the species included may prove to be of fairly common, or at any rate regular, occurrence, at some season of the year. Of certain of them, however, the individuals taken were evidently beyond the normal bounds of the species. These are: *Phaëthon aethereus*, *Rallus levipes*, *Crotophaga sulcirostris*, *Ceryle a. septentrionalis*, *Melanerpes erythrocephalus*, *Platypsaris a. albiventris*, *Zamelodia ludoviciana*, *Passerina v. pulchra*, *Lanius borealis*, *Vireosylva olivacea*, *Protonotaria citrea*, *Dendroica virens*, *Setophaga ruticilla*, *Toxostoma rufum*, *Nannus h. pacificus*, *Hylocichla f. salicicolus*.

Each of the above is admitted to the state list of birds on the basis of the capture of at least one specimen, but it is not to be expected that the species prove to be of regular occurrence.

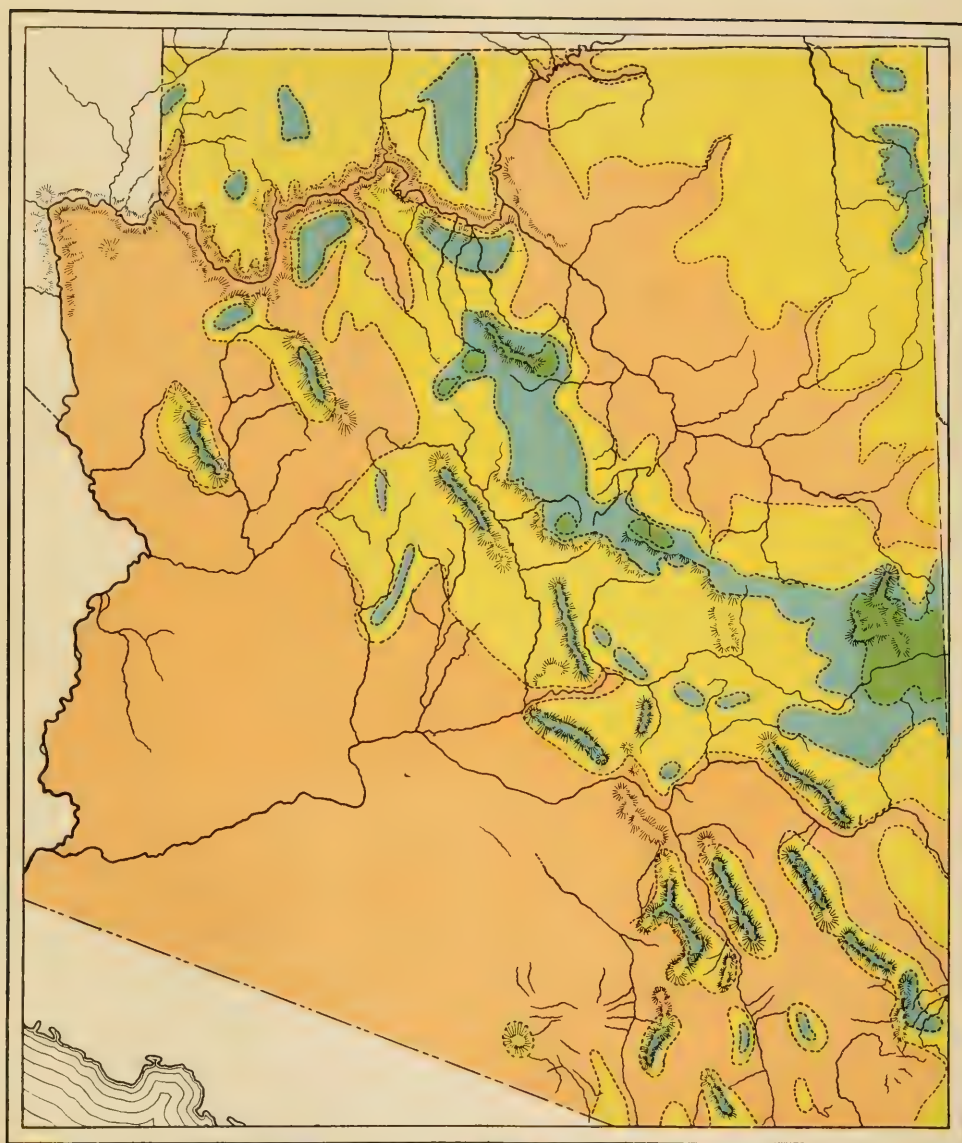
Two others, *Calypte anna* and *Selasphorus alleni*, have occurred with sufficient frequency to have entitled them, perhaps, to a place in the category of migrants, but the present definition seems to best express their manner of occurrence, late summer wanderers, and not travelers to a determined destination.

## SPECIES OCCURRING IN THE LOWER SONORAN ZONE

## SUMMER VISITANT

- |                                  |                                  |
|----------------------------------|----------------------------------|
| 1. <i>Melopelia a. trudeaui</i>  | 10. <i>Tangavicus a. aeneus</i>  |
| 2. <i>Buteo a. sennetti</i>      | 11. <i>Icterus c. nelsoni</i>    |
| 3. <i>Buteo swainsoni</i>        | 12. <i>Peucaea botteri</i>       |
| 4. <i>Asturina plagiata</i>      | 13. <i>Peucaea cassini</i>       |
| 5. <i>Chordeiles a. texensis</i> | 14. <i>Guiraca c. lazula</i>     |
| 6. <i>Tyrannus verticalis</i>    | 15. <i>Piranga r. cooperi</i>    |
| 7. <i>Myiarchus m. magister</i>  | 16. <i>Vireo b. arizonae</i>     |
| 8. <i>Empidonax t. trailli</i>   | 17. <i>Vermivora luciae</i>      |
| 9. <i>Camptostoma imberbe</i>    | 18. <i>Dendroica a. sonorana</i> |





LOWER SONORAN    UPPER SONORAN    TRANSITION    BOREAL

LIFE ZONES OF ARIZONA

## RESIDENT

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| 1. <i>Colinus ridgwayi</i>           | 26. <i>Otocoris a. adusta</i>        |
| 2. <i>Callipepla squamata</i>        | 21. <i>Otocoris a. pallida</i>       |
| 3. <i>Lophortyx gambeli</i>          | 22. <i>Corvus cryptoleucus</i>       |
| 4. <i>Chaemepelia p. pallescens</i>  | 23. <i>Molothrus a. obscurus</i>     |
| 5. <i>Scardafella inca</i>           | 24. <i>Amphispiza b. deserticola</i> |
| 6. <i>Parabuteo u. harrisi</i>       | 25. <i>Aimophila carpalis</i>        |
| 7. <i>Falco fusco-caerulescens</i>   | 26. <i>Melospiza m. saltonis</i>     |
| 8. <i>Polyborus cheriway</i>         | 27. <i>Pipilo aberti</i>             |
| 9. <i>Otus a. gilmani</i>            | 28. <i>Cardinalis c. superbus</i>    |
| 10. <i>Speotyto c. hypogaea</i>      | 29. <i>Pyrrhuloxia s. sinuata</i>    |
| 11. <i>Glaucidium phalaenoides</i>   | 30. <i>Phainopepla nitens</i>        |
| 12. <i>Micropallas whitneyi</i>      | 31. <i>Toxostoma c. palmeri</i>      |
| 13. <i>Geococcyx californianus</i>   | 32. <i>Toxostoma bendirei</i>        |
| 14. <i>Dryobates s. cactophilus</i>  | 33. <i>Toxostoma l. lecontei</i>     |
| 15. <i>Centurus uropygialis</i>      | 34. <i>Toxostoma crissale</i>        |
| 16. <i>Colaptes c. mearnsi</i>       | 35. <i>Heleodytes b. couesi</i>      |
| 17. <i>Calypte costae</i>            | 36. <i>Auriparus f. flaviceps</i>    |
| 18. <i>Sayornis sayus</i>            | 37. <i>Polioptila plumbea</i>        |
| 19. <i>Pyrocephalus r. mexicanus</i> |                                      |

The Lower Sonoran zone occupies a larger portion of the state than any other of the faunal subdivisions. It includes the vast desert area of western Arizona, and extends as long, narrow ribbons far up the valleys of the Gila River and its tributaries, and along the Colorado River to, and including, the desert of the Little Colorado River, in the northeastern corner of the state. In these Lower Sonoran valleys of Arizona many of the distinctive southwestern desert types attain their greatest development. The group of thrashers is a good example of this class; while there are distinctive low zone species of doves, quails, and woodpeckers, several species of each, with great abundance of individuals.

The various associations found within the Lower Sonoran zone present combinations of species quite as distinctive as those inhabiting different zones. Among these may be mentioned the association of the mesquite-bordered streams, in which are found the White-winged Dove, Vermilion Flycatcher, Crissal Thrasher, Lucy Warbler, Sonoran Yellow Warbler and Verdin; that of the giant cactus, with the Sahuaro Screech Owl, Elf Owl, Gilded Flicker, and Arizona Crested Flycatcher; and that of the creosote and cholla cactus covered mesa, with the Black-throated Sparrow, Palmer, Bendire and Leconte thrashers, Cactus Wren, Plumbeous Gnatcatcher and Texas Nighthawk. These lists, of course, are not at all complete, but include merely some of the most conspicuous and typical birds of each association. The subject is deserving of careful study, such as cannot be attempted in this connection, and should include consideration of the mammals and reptiles of the regions as well as of the birds. Many of the correlations noted even in a cursory survey of the available data, are extremely interesting.

## SPECIES OCCURRING IN THE UPPER SONORAN ZONE

## SUMMER VISITANT

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| 1. <i>Cyananthus latirostris</i>    | 4. <i>Icterus parisorum</i>       |
| 2. <i>Myiarchus l. olivascens</i>   | 5. <i>Vireosylva g. swainsoni</i> |
| 3. <i>Myiochanes r. richardsoni</i> | 6. <i>Vireo vicinior</i>          |

## RESIDENT

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| 1. <i>Otus a. cineraceus</i>      | 7. <i>Aimophila r. scotti</i>     |
| 2. <i>Dryobates arizonae</i>      | 8. <i>Vireo h. stephensi</i>      |
| 3. <i>Melanerpes f. aculeatus</i> | 9. <i>Baeolophus i. griseus</i>   |
| 4. <i>Tyrannus vociferans</i>     | 10. <i>Baeolophus wollweberi</i>  |
| 5. <i>Aphelocoma woodhousei</i>   | 11. <i>Poliophtila c. obscura</i> |
| 6. <i>Aphelocoma s. arizonae</i>  |                                   |

The Upper Sonoran zone occupies a comparatively limited area in the state, and the list of birds confined to it solely is a short one. In southern Arizona this zone is in few places of greater width than is comprised in the belt of live-oak covered foothills between the higher mountains and the valleys below. Of the seventeen species listed as peculiar to this zone, eleven are preeminently birds of this live-oak association, as follows: *Otus a. cineraceus*, *Dryobates arizonae*, *Melanerpes f. aculeatus*, *Tyrannus vociferans*, *Myiarchus l. olivascens*, *Aphelocoma woodhousei*, *Aphelocoma s. arizonae*, *Vireo h. stephensi*, *Baeolophus i. griseus*, *Baeolophus wollweberi*, *Poliophtila c. obscura*.

Of the remaining six, *Cyananthus latirostris*, *Myiochanes r. richardsoni*, and *Vireosylva g. swainsoni* are to a great extent denizens of the sycamores along the cañon streams in the foothills, *Icterus parisorum* and *Aimophila ruficeps scotti* frequent the agave and scrub-oak covered hillsides, while *Vireo vicinior* is in the denser brush of the same region.

SPECIES IN THE TRANSITION ZONE AND HIGHER, MORE NEARLY RELATED TO THE  
ROCKY MOUNTAIN FAUNA TO THE NORTHWARD

## SUMMER VISITANT

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| 1. <i>Chordeiles v. henryi</i>       | 8. <i>Vermivora virginiae</i>     |
| 2. <i>Nuttallornis borealis</i>      | 9. <i>Dendroica a. auduboni</i>   |
| 3. <i>Zonotrichia l. leucophrys</i>  | 10. <i>Dendroica graciae</i>      |
| 4. <i>Zamelodia m. melanocephala</i> | 11. <i>Dendroica nigrescens</i>   |
| 5. <i>Piranga ludoviciana</i>        | 12. <i>Wilsonia p. pileolata</i>  |
| 6. <i>Tachycineta t. lepida</i>      | 13. <i>Hylocichla g. auduboni</i> |
| 7. <i>Lanivireo s. plumbeus</i>      |                                   |

## RESIDENT

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| 1. <i>Dendragapus o. obscurus</i>     | 15. <i>Loxia c. stricklandi</i>      |
| 2. <i>Columba f. fasciata</i>         | 16. <i>Spinus pinus</i>              |
| 3. <i>Aquila chrysaetos</i>           | 17. <i>Pipilo m. montanus</i>        |
| 4. <i>Strix o. huachucae</i>          | 18. <i>Troglodytes a. parkmani</i>   |
| 5. <i>Cryptoglaux a. acadica</i>      | 19. <i>Certhia f. montana</i>        |
| 6. <i>Glaucidium g. pinicola</i>      | 20. <i>Sitta canadensis</i>          |
| 7. <i>Dryobates v. leucothorectis</i> | 21. <i>Sitta p. pygmaea</i>          |
| 8. <i>Picoides a. dorsalis</i>        | 22. <i>Penthestes g. gambeli</i>     |
| 9. <i>Sphyrapicus thyroideus</i>      | 23. <i>Regulus c. calendula</i>      |
| 10. <i>Cyanocitta s. diademata</i>    | 24. <i>Myadestes townsendi</i>       |
| 11. <i>Perisoreus c. capitalis</i>    | 25. <i>Planesticus m. propinquus</i> |
| 12. <i>Nucifraga columbiana</i>       | 26. <i>Sialia m. bairdi</i>          |
| 13. <i>Hesperiphona v. montana</i>    | 27. <i>Sialia currucoides</i>        |
| 14. <i>Carpodacus cassini</i>         |                                      |

SPECIES IN THE TRANSITION ZONE AND HIGHER, MORE NEARLY RELATED TO THE  
MEXICAN PLATEAU FAUNA TO THE SOUTHWARD.

SUMMER VISITANT

- |                                      |  |
|--------------------------------------|--|
| 1. <i>Otus trichopsis</i>            | 8. <i>Myiochanes p. pallidiventris</i> |
| 2. <i>Otus flammeolus</i>            | 9. <i>Empidonax f. pygmaeus</i>        |
| 3. <i>Trogon ambiguus</i>            | 10. <i>Piranga hepatica</i>            |
| 4. <i>Antrostomus v. macromystax</i> | 11. <i>Dendroica a. nigrifrons</i>     |
| 5. <i>Eugenius fulgens</i>           | 12. <i>Setophaga picta</i>             |
| 6. <i>Cyanolaemus clemenciae</i>     | 13. <i>Cardellina rubrifrons</i>       |
| 7. <i>Myiodynastes luteiventris</i>  | 14. <i>Certhia f. albescens</i>        |

RESIDENT

- |                                  |                                 |
|----------------------------------|---------------------------------|
| 1. <i>Cyrtonyx m. montezumae</i> | 4. <i>Junco p. dorsalis</i>     |
| 2. <i>Meleagris g. merriami</i>  | 5. <i>Peucedramus olivaceus</i> |
| 3. <i>Junco p. palliatus</i>     | 6. <i>Penthestes sclateri</i>   |

Dividing the sixty species occurring in the Transition zone and higher into two groups we find that there are forty which are the same as, or closely related to, species occurring to the northward, in the Rocky Mountains or in the Sierra Nevada of California, and twenty which are the same as, or most closely related to, Mexican forms.

Many of the first mentioned group find their southern limit in northern or central Arizona, some extend to southern Arizona, and about half the list occur southward onto the plateau region of northern Mexico. A division of this group into summer visitants and residents results in thirteen of the former and twenty-seven of the latter. From these relative numbers it is evident that the birds of the high mountains of northern and central Arizona are mostly species at the southernmost extension of their ranges, indicating, in fact, the southern limit of the Rocky Mountain avifauna.

Now turning to the species of Mexican affinities we find conditions reversed, in that of the twenty forms listed, fourteen are summer visitants, while only six are resident. These birds, of tropical derivation, are here at their northernmost limits, and but a small proportion of them can endure the winter climate of this latitude. Of the fourteen summer visitants all but one extend only into the southern half of Arizona, many of them but an extremely short distance north of the southern boundary of the state.

A great difference in the bird life of the higher zones of northern and southern Arizona is that while in the former region a great part of the population is resident, in the latter most of the species depart during the winter months. The highest parts of the mountains of southern Arizona are noticeably deficient of bird life in winter, and many of the birds seen at this time belong to species nesting farther north in the state, which occur here in winter only.

In general it may be said of the avifauna of the high mountains of Arizona, that the ranges of the northern part of the state are more nearly like the Rocky Mountains to the northward, and the northern Sierra Nevada, while the southern mountain chains bear a somewhat closer resemblance to the mountains of southern California. In the northern and central parts of the state we find such species as *Dendragapus obscurus*, *Picoides a. dorsalis*, *Perisoreus c. capitalis*, *Zonotrichia*

*leucophrys* and *Hylocichla g. auduboni*. While the distinctive feature of the southern mountain chains is, of course, the strikingly large element of Mexican species, many of them distinctly subtropical, such as *Cyrtonyx m. mearnsi*, *Dryobates arizonae*, *Peucedramus olivaceus*, *Cardellina rubrifrons*, *Trogon ambiguus*, and the numerous species of hummingbirds, there are besides these, many others closely related to southern California forms. In this class may be mentioned *Strix o. huachucae*, *Melanerpes f. aculeatus*, *Aimophila r. scotti*, *Pipilo f. mesoleucus*, *Vireo h. stephensi*, *Sitta pygmaea*, and *Bacolophus i. griseus*. Of these the *Strix*, *Aimophila*, and *Vireo* are of peculiar interest, for although but slightly distinguished from their California relatives, the habitats of the Pacific Coast and Arizona representatives are so widely separated that there is no possibility of their joining at any point. These birds must be treated as subspecies rather than species on the ground of the slight degree of difference between the races, for they are resident wherever they occur, and from the manner in which they are isolated in comparatively limited areas of Upper Sonoran and Transition in the vast surrounding extent of Lower Sonoran desert, there is no possibility of continuity of range with their closest allies.

To sum up, it thus appears that the bird life of the higher mountains of Arizona is a rather curious composite, of more northern Rocky Mountain forms extending southward, and of the southern, Mexican plateau forms extending northward, the two faunas meeting, and to a certain extent interdigitating. Added to these are other species, probably of southern derivation, closely allied to Pacific Coast races but entirely isolated from them. Somewhat similar conclusions were reached by Mearns in a paper on the avifauna of the mountains of central Arizona (1890, pp. 45-50), but with an assumption of more continuous connection of the Arizona mountains with the Sierras of central California than seems to exist.

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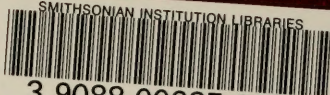








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